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British Medical Journal

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Remarks
ON
THE PRESENT POSITION OF THE PROBLEM OF PSYCHIATRIC PATHOLOGY.*

BY
W. F. MENZIES, M.D.Ed., F.R.C.P.,
CHEDDLETON.

THE mental case is too often an unwelcome addition to the anxieties of the busy practitioner. Apart from nursing difficulties the whole process of ingravescent mental disorder seems to him so ill-defined, even mysterious, that he scarcely knows where to begin. He finds it far from easy to persuade the relatives that early removal to a special hospital is desirable, although he assures them that thus only can the patient receive proper treatment. This is a most generous attitude on his part, for he knows that, except for moral control and outdoor exercise, the case will receive much the same symptomatic treatment as he himself is well able to supply—chiefly laxatives and sedatives. But it is undesirable that any case of illness should present itself to a medical man as a nuisance, and for this those who practise and teach psychiatry are largely to blame. The limited time available in a crowded curriculum precludes the teacher from directing the attention of the senior student to the physiological and neurological aspects of mind, so that, coming fresh from more exact histological and biochemical laboratory methods, he is given "nothing to get hold of." We may as well admit our ignorance—we cannot teach what we do not know; for, let there be no doubt about it, theories of the causation of mental illness are highly problematical. But the best way to tackle a problem is to set up a theory and then proceed to demolish it, until from the ruins a sounder edifice can be erected. There are no mental diseases properly so called, there is only disordered action of the brain cortex; there is no essential difference between the neuroses, the psychoneuroses, and the psychoses; the diseased processes which result in mental illness are just those which we are accustomed to recognize in physical disorders, and that the clinical presentations are so different is more a social than a medical problem. Therefore I believe that the general practitioner could help the psychiatrist beyond measure if he had time to make a note on his clinical cases of all the slight mental changes which occur from day to day—the attitude, facial expression, mental outlook expressed in conversation, memory, attention, interests, dreams, reaction to pain, and so on, carefully correlated to the somatic signs present. This address is frank propaganda; its object is to seek the help of our medical colleagues in furthering the great cause of mental welfare, one important aspect of which is the pathology of mental disorder. It may enlist their interest if I mention a few of the almost innumerable problems upon which we should like light to be thrown. These are not selected quite at random, but because over forty years of clinical experience suggest to me that some of them may ultimately yield useful results in furthering the cause we have at heart.

The efforts of Pinel, Tuke, Conolly, and others at the beginning of last century and earlier were devoted to the social amelioration of the insane rather than to the scientific side, so that France and England lagged behind Germany; nor had the United States, where of late years more work has been done than anywhere else, yet entered the lists. But for nearly a century a long roll of distinguished workers in the Wakefield Asylum laboratory has kept alive the spirit of research—Sir William Ellis, Sir David Ferrier, Dr. Henry Maudsley, Sir James Crichton-Browne, Dr. Herbert Major, Professor Bevan Lewis, and the present president of the Royal Medico-Psychological Association, Professor J. Shaw Bolton. Nowadays, of course, nearly every mental hospital and psychiatric clinic has its laboratory, and, especially since 1918, an enormous stream of literature has poured forth, applying to mental cases nearly every clinical or laboratory test which has been suggested for use in general medicine. And withal I think we must confess that no special light has been thrown upon the genesis of mental disorder. Not that all these efforts have been wasted; on the contrary, a negative deduction is of value in eliminating one more source of error.

Within the last two years the Royal Medico-Psychological Association, recognizing that one great reason for failure has been diffusion of effort, and that more and more in the future team work will be necessary, has, mainly through the enthusiastic drive of one of our recent presidents, Colonel J. R. Lord of Epsom Mental Hospital, appointed a comprehensive committee to co-ordinate investigation. We do not expect miracles, we realize that none of those at present alive are likely to see a solution of our difficulties, but we do at least hope to make a beginning, to build up effort gradually, until in the end some such body as the Medical Research Council, or even the League of Nations, takes up the work. But right at the beginning it seems to me that it would be a mistake to start with such abstruse problems as schizophrenic conditions; we are more likely to advance by means of the simpler emotional and toxic psychoses. It is true that the lamented death of Sir Frederick Mott left incomplete his work on dementia praecox and the endocrine glands, but I think he wanted really to establish a standard; for he often expressed to me the hope that biochemical work on the action of the vegetative nervous system in connexion with the emotions would follow upon his anatomical findings. And so I confine myself here to the manic-depressive or toxic psychoses, and suggest a pathology which will serve as well as any other as a cock-shy; for what excites opposition may also, in some corner or other, stimulate investigation.

The mention of the word toxaemia is apt to raise a smile, yet I doubt if anyone questions its importance in disease. Many, perhaps most, families of micro-organisms, aerobic and anaerobic, produce by their life-processes haemolytic or neurolytic non-specific poisons, chiefly in the intestine, but also in mouth, fauces, accessory sinuses, or genito-urinary tract, less often in joints, lungs, or skin. These toxins are normally dealt with by the portal system, principally the liver, but if this barrier fails they may reach any part of the body in the blood stream. Before they can affect the neurones of the central nervous system they must reach the cerebro-spinal fluid through the reticulo-endothelial system of the choroid plexuses, and only then can a psychosis be produced. The actual method of production, as suggested by the work of Marinesco, Mott, and others, seems to be a toxic anoxaemia by inhibition of the neuronal oxidases, so that the state of synaptic resistance is altered and the cortical pathways disorganized, for synaptic resistance is the anatomical basis of all regulated nerve action. But, further, the pathways in the basal ganglia, hypothalamus, and mid-brain are liable to become confused, with disastrous consequences to the vegetative and extrapyramidal reflex systems. And so it may come about that the basic emotional feeling-tone which determines the character of the psychosis may be due, not to any difference in the nature of the original toxaemia, nor to any primary variation in the quality of the endocrine secretions, but only to the manner in which these are influenced by the sympathetic system, and so ultimately to the directional manner in which the built-up emotion is presented to the cortical analysers. Therefore I suggest that five essential fields for research are: (1) the bacteriology of the intestine and accessory sinuses; (2) the proteolytic functions of the liver; (3) the histology of the basal ganglia, mid-brain, and hypothalamus; (4) the influence of toxic agents on the cortex; and (5) the permeability of the choroid plexuses.

BACTERIOLOGICAL PROBLEMS.

Clinically we have a good deal of negative knowledge of toxaemia in the psychoses. We meet sepsis in all its forms in mental hospitals; in fact, the helpless social habits of our patients constitute one of our worst surgical troubles: but we never find a septic infection arousing an acute mental exacerbation in a chronic case. I have never seen an acute puerperal psychosis arising primarily in a mental bospital confinement—that is, in a patient already

* Made at a meeting of the Staffordshire Branch of the British Medical Association, May 16th, 1929.

under treatment for some delusional or chronic mental illness. We all know that in a very small percentage of cases of almost any bodily disorder, exanthematous or otherwise, a psychosis may arise, and this quite independently of the degree of severity of the illness. On the other hand, many diseases have their specific mental side, such as thyroid imbalance or pellagra. That toxaemia has a very real connexion with the psychoses is indicated by the improvement when sources of sepsis are removed, especially by a course of autogenous vaccines. Some pathogenic organisms are highly virulent, and produce a toxin demonstrable by a specific reaction, but most intestinal groups are of low virulence, and produce mixtures of non-specific ptomaines whose influence on the host varies extraordinarily under different conditions of susceptibility, etc. This at once suggests some abnormal deviation in a group normally indigenous to the bowel.

At Cheddleton Major F. H. Stewart, working with aerobic methods, has studied the formation by coliforms of phenol and tyramine from tyrosine, and has established the following position.

1. Carriers of N.L.F. coliforms (paracolon mutabile) are four times more common among acute mental patients than among sane controls on the same diet.

2. Bacteria forming phenol from tyrosine in alkaline media are much more abundant in the faeces of acute psychotics than of sane controls; these were chiefly (*a*) the Morgan group (in 25 per cent. of mental cases and 9.5 per cent. of controls), (*b*) *B. phenologenes* of Berthelot—that is, a generic term for any phenol-forming coliform.

3. Fifty per cent. of acute psychotics yielded from faeces in tyrosine media over 0.015 per cent. of phenol; no sane controls reached this amount; many yielded none. Of course, no one supposes that phenol itself is the toxic agent, but it is a mensurable indicator of some more complicated abnormal product.

4. Intravenous autogenous Morgan vaccination will remove this bacillus from the stools without immediate mental improvement, but bodily symptoms may be relieved—that is, headache, dyspepsia, anaemia, loss of weight.

5. In relapsing cases thus treated the place of Morgan in the intestine is taken over by one of the phenologenous group.

Those interested in the subject will find Stewart's work set forth in detail mostly in recent numbers of the *Journal of Mental Science*. What interests us here is not scientific labelling, but solely the question, Does this or that organism produce a toxin? If so, under what conditions, and what is its biochemistry?

Dr. Ford-Robertson at St. Andrew's Hospital, Northampton, has been working on the anaerobic groups, especially the diphtheroid-lepto-streptothrix types, and believes that subtoxic anaerobes play an important part in chronic focal infections, principally in the intestine, but also in teeth, tonsils, sinuses, and cerebro-spinal fluid. Special forms of anaerobes have been found in mental cases which are rare in sane controls, and it would appear that to some groups the central nervous system is especially susceptible.

The work of Dr. F. A. Pickworth, pathologist to the Birmingham Mental Hospitals, is well known from his publications on the bacteriology of the accessory sinuses. Some of his beautifully mounted specimens show bacteria from the sphenoidal sinus passing through the thin bony septum and invading the pituitary fossa and substance of that gland. Many of the patients treated at the Birmingham mental hospitals for sinusitis by Mr. W. S. Adams are stated to have lost their more urgent symptoms—headache, malaise, and depression—and to have been able to return home and resume work.

Finally, in connexion with bacteriological problems, many believe that the organisms actually at fault are filterable viruses, possibly commensal with some which can be readily recovered from the intestine and other body cavities.

Liver Efficiency.

It is not without significance that mental diseases have been associated with liver disturbances since the dawn of medicine; the word melancholia reminds us of the connexion. Clinically a large percentage of recent and acute psychotics show marked digestive upset, chiefly the manic-depressive types, the so-called "toxic" or "toxaemic" class. It is the usual thing for chronic cases subject to periodical acute relapses to usher these in with a "bilious" attack. In recent melancholia we find anorexia, flatulence, gastric discomfort, constipation, often slight jaundice; in early mania, headache, furred tongue, foul breath, or vomiting; all these, of course, are traceable to disturbance of the involuntary nervous system. But there are so many other disorders apart from mental illness which exhibit similar troubles that we want all the information we can get about the emotional side of such functional upsets as seasickness, migraine, vertigo, tinnitus, nystagmus, headache, and the large class of neuroses dubbed "neurasthenia," as well as those included under such headings as "the chronic abdomen." No doubt the intact intestinal mucosa ought to prove an efficient barrier against the entrance of toxins into the portal circulation, but enteroptosis, liver cirrhosis, jaundice, appendicitis, cholecystitis, atheroma, and countless other disorders are evidence of the universality of toxaemia. The functions of the liver are so numerous and ill defined that it is difficult, even theoretically, to devise efficiency tests. The glycogenic function is about the only one which has been seriously attacked in connexion with mental states in this country. S. A. Mann at the Maudsley laboratory, and Drury and Farren Ridge at Stafford, have estimated the blood glucose in a series of cases, and the former in another series used the levulose reaction. Everyone admits that sugar storage is disordered in mental disorder, especially in melancholia, but Mann concludes that the pancreas rather than the liver is at fault. I hardly think his cases were very well selected; what is wanted is not a haphazard group of mental patients, but rather an intensive study of a few cases, correlating the results with the varying mental states. Isabella Robertson has dealt somewhat fully with the homoclasic crisis of Widal, and here again the results are indeterminate, although certainly a leucopenia is much commoner in psychotics than in normal controls. But the connexion of the haemoclasic crisis with liver functions is still undetermined. The various papers of the above workers may be found in the *Journal of Mental Science*, July, 1925. I cannot find any record of a systematic series of van den Bergh reactions in mental cases; it would be trying to the patients to bleed them sufficiently often, and this procedure alone would tend to vitiate results. In some cases at Cheddleton we have obtained encouraging results, but it has only been used where some suspicion of hepatic defect was otherwise excited. It would appear that the efficiency of the liver cells varies from hour to hour, and that the reserve of efficiency is very large. There are some diseases where degeneration of liver and central nervous system occurs simultaneously, such as in Wilson's disease. Also one occasionally, in mental hospitals, meets with cases of pernicious anaemia and subacute combined sclerosis which develop a psychosis, and this may be either excitement or depression.

Mid-brain and Hypothalamus.

Our knowledge of the mid-brain, hypothalamus, and tegmentum is still most imperfect. The parts are not easy of access in the experimental animal, small lesions are misleading and easily fatal, the paths are short and lend themselves badly to degenerations, and the systems are very complicated and not strongly marked. The main connexions of the red nucleus have been fairly well established; it can be studied phylogenetically, and its position as a great co-ordinating centre of extrapyramidal and cerebellar functions is clear. But other grey masses still elude us, and for further advance we must trust to careful records of clinical cases. In this way we are beginning to learn something of two great ganglia—the substantia nigra and the corpus Luysii. It would appear that the neurones of the former are greatly reduced in Parkinsonian degeneration, whatever other centres may be in addition, those of the latter in chronic chorea. Now these two degenerations are associated with somewhat specific mental states. In advanced Parkinsonism euphoria is the rule, although not always seen in early cases. This euphoria is real mental satisfaction and contentment in the patient, and is not merely loss of power over the facial muscles hiding the expression of a dysphoria; the patient enjoys life and entirely fails to realize the gravity of his condition, and a

similar feeling-tone is described in lenticular degenerations. In chorea another change is seen—gross instability of emotional tone. Dr. Pindon Martin[1] has found that nearly all recorded cases show such mental changes and that they are associated with degeneration of the corpus Luysii. Just as in acute chorea the muscular movements are entirely purposeless and belong to a low physiological level, so in chronic chorea the patient is apt to be impulsive, irascible, and uncontrolled. This is well seen in Huntington's chorea, such families being notable for illegitimacy and drink.

The broad view to take of the mid-brain, hypothalamus, and bulb is to look upon the grey masses not so much as nuclei of origin of nerve impulses, but rather as great reflex relay stations between cortical and striothalamic functions; and if it can be shown that different focal lesions are accompanied by uniformly varying feeling-tones the possibility is opened up that emotional variations depend, not so much on the nature of endocrine, sympathetic, and other afferent elements, as on divagations of the paths of presentation to the thalamus, and ultimately to the cortex. The Lange-James theory of the emotions depends upon results produced through afferents from somatic muscle, but we now realize that this is only a small part of the picture, for plain muscle everywhere produces a like effect upon the elements of an emotion. Not seldom one comes across manic-depressive cases whose relapses are sometimes into excitement, sometimes into depression—this from similar sets of causes and without regular sequence. People gravely ill from, say, puerperal or other sepsis vary greatly; some are petulant and fearful, some unreasonably buoyant. And the same occurs in advanced phthisis. Until we know what happens to the sympathetic afferents after they enter the cord, and until we know whether the pain fibres in the posterior columns are unmyelinated or not, it would be premature to formulate definite theories; but if differences in synaptic resistance in the subthalamus and neighbouring parts can be produced by neurotoxins, then the whole mass of glandular, vascular, respiratory, and postural elements which go to build up the complete emotional picture may depend upon geography. Such a line of thought leads straight to Pavlov's theory of sleep; internal cortical inhibitions spreading to the great basal relay stations would remove at once the necessity for predicating a sleep centre in the hypothalamus; synaptic resistances would produce the same effect.

The Action of the Brain Cortex.

The two principal directions in which the human cortex transcends that of lower phylae are the more extensive association areas round each primary centre and the growth of the supragranular layers. Both these have really one objective—the multiplication of neural paths. Supragranular axons are associational only, within the cortex, and each individual path is quite short; infragranular axons form the corticifugal side of the two-way paths to lower nervous levels. The granular layers are, in some sense-reception centres, such as the visuosensory, so numerous as to form a duplicated line, and in final transmitting centres, such as the precentral, so few that the area has been called "agranular." Granule, or stellate, cells are, wherever they occur, the jack-plugs of the switchboard; their dendrites form synapses with the collaterals of distant neurones; their axons break up at once and form synapses with the dentrites of the next neurones in order. They are the actual anatomical means whereby multiplication of neural pathways can be utilized; they are essential elements in the structure of mind. It is sometimes not easy to realize that mind is merely an anatomical arrangement of intensely complicated cortical pathways, and that numerically the neurones can account for all the phenomena displayed. There are a good many platitudes which as neurologists we recognize but as psychiatrists we jib at. Yet there is only one kind of nerve action, whatever it is. A neurone can only discharge, on the "all or none" principle, go through a refractory interval, and slowly recover. There is not one kind of excitation stimulus and another kind of inhibition stimulus; it is all a question of paths. Many years ago Professor McDougall formulated his "neurine" hypothesis, and it has never been improved upon, although possibly he laid too much stress on the passive aspect. Then there is the law of dynamic polarity: the synapses are one-way valves. How they act we know not, but probably it is a matter of slight variations in the hydrogen-ion concentration from moment to moment. Again, serial representation occurs everywhere, as has actually been demonstrated in the visual pathway. So mental images and ideas are slowly built up by repeated experience of different degrees of stimulus. Every concept involves the whole of the nervous system, if only by reference to unconscious memory habits; but not every stimulus causes every neurone to discharge, even in the epileptic fit, the nearest approach to a mass discharge which we know. The convulsion, however, is sufficiently near it to indicate the nature of coma, and, conversely, to suggest that consciousness is a state of receptivity of the cortex to incoming stimuli unimpeded by generalized inhibition, which latter is, as Pavlov points out, sleep. Attention is a directed concentration of neural paths, generally determined by the emotion of the moment. All life is one vast complication of conditioned reflexes at every physiological level, and the unconscious are to the conscious as a million to one. By the law of summation of stimuli repetition lowers the synaptic resistance of a given path, hence instinct, habit, custom. Some paths are biologically very old; thus, the vagus system has altered little since the time of Silurian invertebrates. Other paths are exceedingly evanescent, such as women's dress fashions. Free will is a figment of the imagination: every human action is guided by an almost endless chain of previous conditioned reflexes—biological, racial, hereditary, educational; and the only reason why an experience is never exactly repeated is that life is not long enough. We flatter ourselves that we are guided by reason, but the only difference in mentality between civilized man and savage is that the conditioned reflexes of the latter are on lower physiological levels; they are not guided by recent knowledge, and so we call them superstitions.

Neuro-toxins and the Cerebro-spinal Fluid.

The central branches of the cerebral arteries supply the choroid plexuses, the cortical branches send tiny loops into the surface grey matter of the hemispheres. The cerebro-spinal fluid is secreted by the choroidal epithelium, and to a small extent also is a serous filtration into the perivascular lymphatic spaces of the brain. This latter is not a reversible action within physiological pressure limits. L. H. Weed in America has for many years investigated this matter, following the original work of Dixon and Halliburton; a summary of Weed's views is to be found in *Physiological Reviews*, 1922. Having escaped through the foramina in the roof of the fourth ventricle and reached the cisterna magna the fluid capillarizes up the arachnoid network, chiefly through the Sylvian fissure, over the hemispheres, tends to pool along the great longitudinal fissure, and gradually enters the superior longitudinal sinus, picking up in its course the products of neuronal disintegration. If it is very toxic it may produce death of many supragranular neurones, which is dementia. If the toxicity was prenatal the growing neurones are nipped in the bud, hence amentia. In any case the irritation of the fluid gradually, as age advances, excites the lymphatic hyperplasia which we call the Paccionian bodies. It may be asked why we do not in an acute psychosis necessarily get motor paralyses, blindness, anaesthesia, and other gross lesions. Such a question loses sight of the essential nature of cortical action. The cortex is, after all, only the highest level of the nervous system; its object is an exquisitely delicate selective release; it does not concern itself with the means by which a movement is performed so much as the reasons for that movement. Even if no movement results, the idea of movement, which older psychologists called ideation or conation, is still there. Besides, the toxic injury is only slight; if it were not so, we should get unconsciousness in some form—in other words, coma. We can no more have an active psychosis with a fully paralysed cortex than we can have athetosis with a wholly destroyed pyramidal tract. The lower mechanisms are older and

sturdier, and they are less directly exposed to the wash of a neuro-toxic cerebro-spinal fluid.

The nature of an insane idea may be illustrated by the sign of "past-pointing." Here a lower mechanism, whether cortical or subcortical, has by instinct and habit established a conditioned reflex of movement and posture which is presented to the cortical analysers as a composite picture or *schema*, as Head calls it, representing the attainment of a certain position in space arrived at in a certain definite manner. When the lower mechanisms are at fault a different picture is produced, which is again accepted by the cortical analysers at its face value, regardless of the fact that the real value has altered. In the insane idea the composite picture is much more complicated, more largely cortical, each component having its own innumerable subschemes derived from every lower physiological level. Thousands of experiences crowd in from every side of our personality—biological, genetic, instinctive, habitual, educative, social; orderly conduction along the millions of paths which constitute normal reason is disturbed by the toxaemia, and the result reacts upon conduct. The details of the process are infinitely complicated, but the mode of action is fairly understandable in the light of our present knowledge.

It is evident that in health the choroid plexuses form a barrier which prevents deleterious substances—for example, organic arsenical preparations—from entering the cerebro-spinal fluid, but I do not know that there is much experimental evidence concerning permeability to tissue poisons. Büchler[2] of Budapest dealt with the subject, and Walter[3] of Rostock Gelsheim devised a bromide permeability test. Measured doses of sodium bromide are given for five days, and a ratio called the "permeability quotient" is set up between blood bromine and C.S.F. bromine. But probably the P.Q. varies from hour to hour according to blood pressure, serum protein content, buffering, and so on; further, permeability to a crystalloid is no index of the behaviour of the much larger colloid molecule. Nor can we separate out the effects of the accumulation of toxins which produce the acute hallucinations occurring in the endurance trials on American speed tracks after days of continuous driving with practically no sleep from those produced by low oxygen tension, and which result in the depression, confusion, and irritability seen in many from continuous high flying or mountain climbing. The cranium is for practical purposes a closed box wherein in health an equilibrium is maintained between the arterial, venous, and cerebro-spinal fluid pressure; the less of any one of these, the more of the others. When the total pressure exceeds physiological limits there comes a time when the amount of arterial blood is insufficient to supply oxygen to the neurones.

I have dealt with mental disease from the physiogenic side. Are there not, then, psychogenic causes as well? Certainly there are, and they often yield to psycho-therapeutic measures, which are, whatever form they take, a deliberate modification on the part of the physician of the patient's higher conditioned reflexes. But their effects are only indirect; the concentrated attention and emotional unrest called worry produce loss of sleep and appetite through endocrine and sympathetic upset, and toxaemia follows. From this stage onwards physiogenic and psychogenic causes march hand-in-hand. I realize that I have given no really practical explanation of mental pathology, but, to tell the truth, we cannot get much further without the intensive work of the biochemist, and the public do not often see the necessity for giving adequate remuneration to a scientific worker who cannot, at a moment's notice, produce rabbits from his hat. The psychiatrist is not wholly to blame for his own ignorance; old legal traditions are powerful, and the state of the law is a heavy drag on our efforts. Nor are our cases easy to manage; they are often restive and always unreliable; they resemble children in that the subjective side of diagnosis is more or less absent, and in many mental conditions even the material obtained for laboratory examination is merely misleading.

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HAEMOSTATIC THERAPY IN HAEMOPHILIA

BY

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THE value of most haemostatic drugs can be demonstrated either *in vitro* or by means of an experimental animal. It does not follow, however, that similar good results will follow in the treatment of pathological states. The value of haemostatic drugs in these conditions rests largely on clinical reports based on impressions unsubstantiated by actual measurements. Furthermore, it is highly probable that a drug which might be completely efficacious in dealing with one form of haemorrhage might be quite useless in the case of another. Our conclusions are therefore strictly confined to haemophilia.

In each case the value of the therapeutic agent has been assessed by its effects on the coagulation time. This can be accurately estimated by the Dale-Laidlaw method. Using this method the average normal coagulation time is 1 minute 45 seconds. Values below 1 minute 35 seconds or above 2 minutes are considered to be abnormal. The bleeding time was also taken in each instance, but in haemophilia it is such a variable quantity that it is of little help in diagnosis and quite useless for assessing the value of treatment. It is quite common in haemophilia to find a normal bleeding time.

Inasmuch as the bleeding from a simple needle puncture in a normal subject often stops before clotting can have occurred it follows that other factors besides clot formation must be involved. Two possible mechanisms are: (1) contraction of the capillary walls, and (2) aggregation of platelets sealing the injured wall (Tidy[1]). In haemophilia there is no known damage to the capillary walls and the platelet count is normal. It is not, therefore, surprising that the bleeding time is often normal. The prolonged bleeding times sometimes found are probably due to puncture of larger vessels, in which case the formation of a clot is necessary to supplement the action of the above two factors. The condition in thrombocytopenic purpura is in direct contrast to this. Here the capillaries are easily damaged and the platelet count is low, and so, despite an almost normal coagulation time, the bleeding time is markedly prolonged.

CASE REPORTS AND RESULTS.

Four cases of haemophilia were investigated.

CASE I.—Male, aged 6. No family history of "bleeders" was obtained. Of two brothers, one was normal and the other had a coagulation time of 2 minutes 18 seconds. The subject himself had frequent haematomas and haemorrhages into his joints. The blood platelet count was 243,000 per c.mm. The Wassermann reaction was negative.

CASE II.—Male, aged 2; an only child. There was no family history of bleeding. He has had several effusions, presumably haemorrhagic, into his joints. While in hospital he cut his tongue and bled for six days, losing much blood. The platelet count was 245,000 per c.mm.

CASE III.—Male, aged 9½. Family history of "bleeders" obtained. He had been in hospital twice before, once for a small wound, and once for teeth extraction.

CASE IV.—Male, aged 5. Family history of "bleeders." On two previous occasions he had been admitted for haemorrhages. Once transfusion was necessary before bleeding stopped, and once injection of his mother's serum controlled the haemorrhage (technical data not available). On the present occasion it was necessary to extract a tooth, and, despite all the usual local treatment, haemorrhage could not be controlled.

In all these cases the bleeding time showed marked variation without any relation to either the coagulation time or the therapeutic substance used. Most of the values obtained were normal. The following figures show the range of the bleeding time in each subject:

Case I	30 seconds to 12½ minutes.
Case II	1¼ minutes to 4½ minutes.
Case III	15 seconds to 4½ minutes.
Case IV	45 seconds to 3¾ minutes.

THE METHOD OF INVESTIGATION.

Most of the substances have been examined in two ways: (*a*) The immediate effect has been studied by determining the coagulation time at frequent intervals after a single dose. The coagulation times were estimated before giving the substance, and then for one hour, at quarter-hour intervals, except occasionally, when estimations were made every half-hour. After the first hour two further estimations were made at about hourly intervals. (*b*) The prolonged effect has been studied by determining the coagulation time before, during, and after a series of doses.

Haemoplastin.

Immediate Effect.—Case i was given 4 c.cm. subcutaneously. The coagulation time fell from 5 minutes 58 seconds to 5 minutes 35 seconds in one hour, and then rose to 6 minutes 49 seconds in two hours.

Prolonged Effect.—Case i was given 2 c.cm. subcutaneously for five days. The coagulation time fell from 5 minutes 8 seconds to 4 minutes 48 seconds on the first day, and rose to 6 minutes 25 seconds on the sixth day. In Cases ii and iii no fall in the coagulation time was observed, but there was a definite rise by the end of the period.

Coagulin Ciba.

Immediate Effect.—Case i was given 20 c.cm. intramuscularly. The only change in the coagulation time was a rise at the end of one hour from 5 minutes 35 seconds to 7 minutes 45 seconds, which lasted for at least two hours.

Prolonged Effect.—Intramuscular injections of 20 c.cm. were given for four days; there was no change in the coagulation time.

Effect of Oral Administration.—Case i was given 1 gram; there was an immediate increase in the coagulation time from 5 minutes 55 seconds to 8 minutes 23 seconds, followed by a rapid decrease to 5 minutes. Within an hour the coagulation time had returned to its initial value.

Fibrogen Merrell (Tissue Fibrinogen).

Immediate Effect.—Subcutaneous injection of 2 c.cm. produced only a small increase in the coagulation time.

Prolonged Effect.—2 c.cm. were given subcutaneously for three days; no change occurred.

Effect of Oral Administration.—On an empty stomach 3 c.cm. in 6 oz. of iced water were given to Cases i, ii, and iii; 6 c.cm. also were given to Case i. In Case i, with 3 c.cm. the coagulation time fell from 5 minutes 30 seconds to 4 minutes 10 seconds in three-quarters of an hour, rising to 7 minutes 37 seconds in one and a quarter hours. With 6 c.cm. the coagulation time fell from 5 minutes 53 seconds to 3 minutes 29 seconds in a quarter of an hour, and rose to 7 minutes 42 seconds in one hour. In Case ii the initial coagulation time was 9 minutes 48 seconds, and during the test it varied irregularly between 8 minutes 32 seconds and 10 minutes 52 seconds. In Case iii the coagulation time rose from 3 minutes 15 seconds to 3 minutes 52 seconds; 6 oz. of iced water alone given to Case i caused the coagulation time to fall from 5 minutes 45 seconds to 4 minutes 17 seconds, with no subsequent rise above the initial time.

Horse Serum.

Immediate Effect.—After 20 c.cm. had been given subcutaneously to Case i there was an initial fall from 5 minutes 44 seconds to 5 minutes 3 seconds, followed by a rise to 6 minutes 23 seconds.

Prolonged Effect.—On two days 10 c.cm. and on the third day 20 c.cm. were given subcutaneously to Case i; no change occurred.

Protein Shock.

(*a*) *Typhoid Vaccine.*—Doses of 10, 20, 50, and 200 million of mixed typhoid, A and B, were given to Case i; no general disturbance occurred and no change in the coagulation time, except after the last dose, when there was a fall from 5 minutes 32 seconds to 4 minutes 3 seconds within an hour, followed by a rise to 6 minutes 50 seconds after two and a half hours.

(*b*) *Milk.*—Subcutaneous injection of 5 c.cm. of boiled milk caused a fall from 5 minutes 36 seconds to 4 minutes 23 seconds at the end of one hour, followed by an increase to 6 minutes 6 seconds three hours later.

(*c*) *Peptone.*—5 c.cm. of a 5 per cent. solution of Witte's peptone were given subcutaneously. Owing to an error the peptone was given before a coagulation time was obtained. The value ten minutes after was 4 minutes 28 seconds. (The average value for Case i was 5 minutes 30 seconds.) Half an hour later the coagulation time was 5 minutes 24 seconds, and no further variation occurred.

Calcium.

Immediate Effect.—Half a grain of calcium chloride was given to Case i intravenously; the coagulation time increased within twenty minutes from 4 minutes 16 seconds to 8 minutes 2 seconds.

Prolonged Effect.—For three days 7 grains of calcium lactate were given daily to Case i; no change resulted. Case iii was given 5 grains three times a day for seven days; a small decrease in the coagulation time occurred.

Citrated Human Blood.

Transfusions were given to Cases iii and iv; in both the bleeding stopped within a quarter of an hour, and the coagulation time the next day had fallen in Case iii from 13¾ minutes to 3 minutes 55 seconds, and in Case iv from 11½ minutes to 3 minutes 40 seconds. In Case iii it returned to the initial level in six days; in Case iv, on the third day bleeding started again, although the coagulation time had risen to only 4 minutes 13 seconds, and further treatment was necessary.

Citrated Human Plasma.

Case i was given 25 c.cm. of citrated human plasma intraperitoneally, with no effect. Case iv was given 10 c.cm. of citrated human plasma intramuscularly on the fourth day after the transfusion; the coagulation time was not altered, and the bleeding, which had restarted on the day before, continued. The next day 30 c.cm. of plasma which had been kept five days in the ice-chest were given intravenously, and after an interval of two hours the bleeding ceased and the coagulation time, which had risen to 5 minutes 11 seconds, fell to 3 minutes 6 seconds, and remained at that level for over forty-eight hours. The coagulation time then very slowly rose, but even after two weeks had not quite reached its initial value.

DISCUSSION.

In this study we have kept in mind the following three points: (1) Can any treatment produce a permanent improvement in haemophilia? (2) Can any treatment produce a temporary improvement? (3) What is the best form of pre-operative prophylaxis?

It may be stated at once that no known agent has any permanent effect in haemophilia. Any improvement in the coagulation time which we found was of a temporary nature. As many of the substances used contained animal protein the question of the effect of protein shock on the blood coagulability will be considered first.

It is accepted by most authorities that foreign protein, when injected into the body in sufficient amount to produce some degree of shock, causes a stage of hypercoagulability followed by one of hypocoagulability. There is, however, for every individual an optimal dosage varying with the type of protein used. Too small a dose results in no appreciable change in the coagulation time; too large a dose shortens the period of hypercoagulability and augments that of hypocoagulability until finally the effect on the blood is for all practical purposes merely to increase the coagulation time. According to Pickering,[2] "success depends on the use of a haemostatic of the required activity and upon the subject not being hypersensitive to its reaction. The optimum dosage is one which will produce a 'plasma shock' with minimal excitation of general shock." It will be clear that finding the correct dosage must be to a considerable extent a matter of chance.

In our hands protein shock, by means of typhoid vaccine, peptone, and milk, produced the normal type of response—namely, a transient state of hypercoagulability followed by one of hypocoagulability. In no case was the actual fall in the coagulation time at all impressive. The responses obtained from the other haemostatic drugs administered so resembled protein shock as to raise the question of whether their effect on the coagulation time in haemophilia was due to the small amount of animal protein present in each preparation. In every case the response was either one of hypercoagulability followed by hypocoagulability or one of hypocoagulability alone. On the other hand, this type of response may also be due to a generalized reaction to a substance tending to cause local clotting (cf. Pickering)—as, for example, with calcium chloride. Following its administration the coagulation time rose rapidly, so that within twenty minutes it was nearly double the initial value. There is no question here of protein shock. In either case the question of dosage must be carefully considered, as there appears to be an equal liability for a

period of hypocoagulability to result. While in the case of adults the size of the dose has been fairly definitely laid down, in children the matter is by no means so clear, and in some cases we have possibly erred in not reducing the adult dose sufficiently.

The only form of treatment that was found to be of any real value was intravenous injection of either citrated whole blood or citrated human plasma; citrated plasma given intraperitoneally or intramuscularly was without effect. Citrated human plasma, as pointed out by Feissly,[3] has the advantage of not requiring a preliminary blood grouping, and the use of human plasma prevents any danger of anaphylaxis. Furthermore, both with whole blood and plasma no stage of hypocoagulability occurs. According to Christie and Gulland,[4] fresh intravenous human serum has only a very small effect as compared with whole blood, as shown by coagulation times; in fact, both Feissly and Christie and Gulland find that no substances other than whole blood or plasma have any but the slightest effect on the coagulation time. Emile-Weil[5] states, however, that monthly subcutaneous injections of human or animal serum prevent spontaneous haemorrhages and reduce the coagulation time, but apparently not to the same extent as plasma or whole blood.

SUMMARY.

The bleeding time is of no value in indicating the liability to haemorrhage in haemophilia.

No method except the injection of intravenous whole blood or plasma produced more than a transient unimportant improvement in the coagulation time. In the majority of cases a period of decreased coagulability occurred of longer duration and greater magnitude than the preceding stage (if any) of increased coagulability.

The most effective agents, both for treatment and preoperative prophylaxis, are citrated whole blood and citrated plasma given intravenously.

We are indebted to Dr. R. Frew and Mr. O. L. Addison and Mr. Tyrrell Gray for permission to use their cases, and also to Miss E. M. Taylor for some of the coagulation times.

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ON THE ORIGINS AND TREATMENT OF DYSPEPSIA.*

BY

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[*Abridged.*]

IT will be well to concentrate upon what I am, perforce, daily familiar with, the natural history of dyspepsia, and upon the lines of treatment that seem justified by the results; for you may try many keys, but the one that will turn in the lock is probably the right key.

Now the data of the natural history of disease are mainly stories of the patients seen. They cannot for the most part be expressed in percentages or graphs. The composite picture, which is in fact our collected experience and our concluded opinion derived from it, can best be drawn by telling the stories of a few patients and making comments upon them as we go along. For brevity, what is printed below consists mainly of the comments.

(A case of acute influenzal dyspepsia, with facial herpes was mentioned.)

Again and again it will be found that, if we dig into the history of a dyspepsia, a common cold was at its root. Or, not uncommonly, as in this child, a transient febrile malaise was associated with gastro-intestinal symptoms. The child was quickly relieved by a few doses of salicin. Since Mr. E. B. Turner taught us all to use salicin in influenza, I have found it of the greatest use, not only in the major epidemics, but also in catarrhs and chills. What I want to bring out here is that it is at least as useful, if not more, in the cases of febrile malaise with digestive symptoms as in those with respiratory symptoms in which, perhaps, it is more commonly employed.

That a facial or labial herpes may accompany acute gastritis was taught by Austin Flint and by Sir William Osler. But I notice that a recent textbook of medicine, encyclopaedic and many-authored, makes no mention of this tell-tale associative sign. It is a sign which, to my mind, clinches the association between acute gastric catarrh and influenza.

(Cases in which gout and trauma played a part were discussed.)

I think trauma was the primary factor in the case I am about to relate.

A man of 30, a yardman at a chemical works, who for several days had been suffering from indigestion attributed to a meal of pork, and from constipation, visited a football match and was crushed in the crowd. He sustained a severe pressure in the upper abdomen. This incident happened at the end of April, 1927. He felt pains in the affected region for a week afterwards. None the less he continued at work. Now the work that fell to his lot from the 1st to the 6th of May was heavy—shovelling heavy clay; moreover, the weather was wet. He was constantly wet through and chilled; and he became very constipated. He felt sick, but could not *be* sick. A week later he began to have an aggravated indigestion, which culminated, seven days later, in an attack which woke him at 3 a.m. He awoke to find himself lying turned towards his left side and in great pain. The pain was situated in the left hypochondrium. It made such an impression on his mind that he noted the exact time of its awakening him.

After a short while he rifted up wind, and that gave him relief from the worst of the pain. He lay still abed till morning.

Now when one listens to a patient relating such a story as this, it is inevitable that one's mind should follow the imagined stages of the progress of the conditions and changes in the viscera which were related to the symptoms as they emerged into the picture. First there would be trauma, some bruise of stomach or intestines. Then the damaged tissue or a thrombosed vein would be open to infection, or, in the stomach or small gut, to digestion; and an ulcer might result. A. J. Carlson goes so far as to say that the stimulation of any sensory visceral nerves makes the pylorus contract or stops its relaxation; whilst Carnot showed that crushing of various organs, or of the parietal peritoneum, had the same effect.* In this case there were aggravating factors in the next few days which may have mordanted the damage, so to speak, and rendered it permanent—cold and wet, heavy labours—aggravating circumstances these, which, adding catarrh and further causes of stasis to the original trauma, established it as a gross lesion.

Then came the day in which he awoke in agony, lying turned towards his left side. The tension within the stomach will be greater in that position than in any other. And it is undue tension that is the common provoker of pain in a hollow organ. Patients often complain that they cannot sleep on the left side because they can hear a pulse beating. I suppose the weight of the liver pressing upon the full, closed stomach, and increasing the tension in it, has something to do with producing this symptom. Turning on to the opposite side cures it. I suppose that it cures it partly by taking the weight of the liver off the stomach, and partly by allowing gravity to help the exit of the food via the pylorus.

If an ulcer had formed in my patient as the result of the crush, the likely site would be the first part of the duodenum. By the time he came under my care, nearly two years later, such an ulcer might have healed and broken down many times, as we see small varicose ulcers do in the leg. Some such lesion would be the most likely with the history he brought. For this first part, the "duodenal cap" is the most vulnerable length—the "hammock hook" from which the stomach is slung, dragged upon when violence is done to the belly.

Assume, then, that an ulcer had formed in my patient in this vulnerable spot: that would explain the nocturnal

* A paper read before the Oxford Division of the British Medical Association at the Radcliffe Infirmary on March 27th, 1929.

* Even after the vagi were cut in the neck. The splanchnic nerves are the path of this reflex.

attack. The ulcer would provoke the stomach rapidly to empty the first part of the meal last taken.* The duodenal cap and the ulcer would be filled with acid chyme. The mere flood of acid is not enough to cause ulcer pain. There is another factor, otherwise there would be no remission; whereas there is often complete remission. Nor do the contractions of the stomach and gut alone provoke pain; for when they have been watched by radiologists, sweeping over the antrum, and restarting sometimes, or starting afresh sometimes, in the pyloric cap, it has been noted that whilst some synchronize precisely with pains, others are entirely painless. It seems there is a third factor besides the acid flood and the contractions. What is this third factor? The authorities speak vaguely of a sensitizing process. Palmer found the ulcer sensitive to acid on some days and not on others. But when I read, in Alvarez's book, a hint which, he tells, Ivy gave him, I felt we were "getting a little warmer," as the children say.

Ivy's hint was got from some animals in which he had closed one end of a loop of bowel and sewed the other end to an opening in the abdominal wall. The bowel at the mouth of the fistula was quite insensitive. That, of course, is familiar enough. But Ivy's further observation, I think, is of an order hitherto unfamiliar: that when the mucous membrane became everted and swollen, then, if it were pinched, great pain and sometimes vomiting resulted. The fashionable metaphor is that the threshold for stimuli has been lowered. Similar conditions, around the edge of an *ulcer*, account, he suggests, for the continuous pain; and the acid flood may play a part, indirectly, by aggravating the swelling of the mucosa.

After the first rapid rushes through the pylorus which radiologists associate with duodenal ulceration, there is a reversal of the process, a spasm of the sphincter and a hold-up of the stomach contents. The normal regurgitation of alkali from the duodenum into the stomach thus fails, and the acidity of the stomach contents is accordingly prolonged. Downward peristalsis in the stomach and reversed peristalsis in the duodenum meet at the closed doors of the pylorus. It was at such a moment, I imagine, that my patient awoke in agony. You will recall the way in which the agony was at last relieved—namely by rifting up wind. The relief, then, came by reversed peristalsis starting in the stomach.

All this happened nearly two years before the man came into my care; but the events he related had ushered in a long period in which the dyspepsia was chronic, the patient despairing of relief. At first he could not work, and was on the sick list for twelve weeks. Then he returned to duty, and managed some work; but his employers, valuing him, gave him that rare and much coveted employ, "a light job."

But he worked in wretchedness. He often felt sick but could not be sick. He was constantly conscious of pains and uneasiness, especially about the left hypochondrium. He had lost his appetite, and had lost weight.

Well, this man got well; or so nearly so that the phrase is justified. And the change followed rapidly on a reorganization of his diet.

Will you allow me to refer to his meals, the changes and reasons for making them, also to his habits?

A remark made by the patient that his bowels were moved daily on getting up in the morning led to a review of the physiological event which precedes a normal action of the bowels, the rush or heave which starts in the colon when food is taken into the stomach. My patient had not taken food into his stomach since the previous night, and therefore I felt there was something wrong. His early morning action was eight or ten hours belated.

Now inhibition is all very well, but it must not be done to death. A patient whom Alvarez mentioned in whom the mere thought of food produced an urgent desire to defaecate was much disadvantaged thereby. His condition was abnormal. But surely the opposite condition also is abnormal, that in which the desire has been so habitually repressed that the sensation passes off and the faeces meanwhile accumulate, not only in the pelvic colon, but in the distended rectum.

In taking that view I find myself opposed to one whose opinion is worthy of very great respect, Dr. Hurst. He thinks that the accumulation which follows several meals may normally be stored in the pelvic colon. The simile of Alvarez is apt. As, when several railway trucks are set rolling down an incline one by one, and come to a standstill when they have exhausted their momentum on the level, though the later ones reach and touch the earlier ones and run together in a group in contact with one another, yet one coming later still, bumping into the group, gives a momentum which is so conveyed through the group to the first wagon of all that that is bumped off the group again and sent rolling independently—*so*, thinks Dr. Alvarez, and *so*, thinks Dr. Hurst, is the accumulation in the pelvic colon normally voided.

That this happens I admit. That it should happen does not seem consistent with full health. As many actions as there are *full* meals seems more normal—for instance, after breakfast and between the last meal and bedtime. Every medical student knows that the two parts of the digestive tract from which the subject derives sensation are the mouth and the rectum; and that it is no more normal for the second to be kept full than the first. Every general practitioner knows that a rectal examination made after a good meal will find the rectum loaded, despite a complete relief "that morning after breakfast." The fact, I think, is that the viscera in question are built to deal with a twelve-hour load, and find it hard to deal with a twenty-four-hour load. The pelvic colon extracts water. The final faeces may be more than twice as concentrated as the fluid that comes through the ileo-caecal sphincter. Two actions daily imply a lower degree of concentration—that is, a softer faecal mass evacuated and a greater *total* weight of faeces. Imagine the difference between a pelvis weighted during the hours of sleep with an accumulation bulging the would-be collapsed rectum, and the pelvi-rectal kink accentuated by a further accumulation in the sigmoid; and, on the other hand, a pelvis from which all the accumulation had been voided at bedtime. To my mind the loaded sigmoid and rectum "keep bad neighbourhood," as our forefathers used to say, with the adjacent organs—with for instance, the uterus in the pre-menstrual epoch; or with the prostate. I dare to think that a morning and an evening action, habitually and naturally obtained, may be reasonably thought of as in some degree prophylactic against enlargement of the prostate.

The relief of headache and sense of pressure in the head following a timely evacuation of the bowels is too prompt to be due to the mere removal of bad chemical influences. It must be due to an adjustment of what Mr. Hilton called the equipoise between the cerebro-spinal fluid and the venous circulation. The relation between the pressure in the cerebral ventricles, the gastro-colic reflex, and defaecation was familiar enough to John Arderne in the fourteenth century: "And witte thou, . . . that the synowez closyng and openyng the lure [rectum] hathe festnyng with the stomake and with the ventriculez of the brayne, And for this cause suche pacientez ar som tyme vexed in the heued and in the stomak."

He is right, too, about those "vexed in the stomak." The increased commonness of appendicitis is no doubt due to the increased commonness of a single daily action. But I would go a little further and say that a great part of the dyspepsia from which sedentary people in middle life commonly suffer is the "expression" of reverse peristalsis quietly rippling back every now and then along the ileum, jejunum, and duodenum as a reflex from a stuffed rectum and loaded colon.

Meat and starchy foods were to be taken at separate meals. Pavlov showed how the mixture of meat and starch was delayed in the stomach twice as long as meat alone. The reason why bread was (in the diet prescribed) withheld as often as possible is empirical. The explanation of the observed benefit may be that bread is a sponge and that the starch in it is therefore difficult of digestive attack. In any case, as the starch grains are unburst they have to wait till they reach the duodenum for digestion.

Dinner was soup, meat and greens, and fruit. The greens were to be ample in amount, to be boiled five minutes* by the clock, to be shaken free from water but

*Galen knew this. "The stomach, when, as often happens, it is irritated by acidity, gets rid of the food, although still undigested, easier than proper." (Galen: "On the Natural Faculties." *Loeb.* III, v.)

*Plunge them in boiling water. Count the five minutes from the time you hear the water come back to the boil.

on no account squeezed, and to be dressed plentifully with butter. No one who has not had green vegetables thus prepared can realize that they can be so much more acceptable than when they are cooked twenty minutes or half an hour in the ordinary way. Ninety per cent. of people who really try this method remain firmly attached to it.

The plentiful dressing of butter or dripping with the greens is of importance, and the oil to be used with salads —*for three reasons:*

1. A natural alliance between vitamin A and fat.
2. The calorie value of this diet, lowered by reduction of starch, is raised by the fat.
3. Fat, passing the sphincter of Oddi, stimulates contraction of the gall-bladder.

Suppose a stomach reasonably filled, after soup (which soon runs out) with a little grilled meat, with greens or salads, yielding, as they do, 3 per cent. of their 5 per cent. of starch, and with fruit, digestion is facilitated. Equally filled with food rich in starchy carbohydrates, such as the conventional bread, potato, and rice pudding which form the bulk of the so-called meat meal of the middle and working classes, the stomach would often be overtaxed with foods of a texture if was not constructed to handle, and which would be delayed in transit by the presence amongst it of meat.

From a mere calorie point of view unnecessary carbohydrate must often be taken at such meals merely to provide the bulk required to still and tranquillize the stomach—bulk which could be better provided by green leaves or by fruit, foods of a more suitable texture and without excess of nourishment.

So much for the principles of the diet which brought relief to the patient instanced, the yard-man at the chemical works.

> (Instances of dyspepsia excited by influenza, colds, catarrhs, gout, trauma, and excessive and unsuitable food were reviewed.)

Not a few large eaters eat too much of too concentrated food because constipation gives them an instinct to take in such a bulk of ingesta as will restart the gastro-colic reflex and steepen the gradient. Dr. Drysdale (of St. Bartholomew's Hospital) once advised me to give such patients boiled cabbage stalks.

Constipation is a feature of most cases of dyspepsia. The "gradient" is "flattened," Alvarez would say, and requires to be "steepened." Curiously enough, he seems much more anxious about devising "smooth diets," and eliminating cellulose, and in dealing with the reflex irritation of colitis than in restoring what Hippocrates would call the stronger diet of pristine health.

> (But that this latter policy can succeed, another case with emaciation and constant vomiting was related as evidence. Finally a patient with gastro-jejunal ulcer, who declined further operation, was described.)

I have tried to tell my very ordinary stories and thereon make my comments, which constitute a mere mental flotsam and jetsam washed up upon the beach of an average medical experience. But I should like to gather a few specimens from this flotsam and jetsam which will have at any rate this merit, that they will be debatable.

Here is the first:

A diet mainly of grilled meat including liver, and fish including roes, and green leaves including lettuce and cabbage, and fruit will often cure a chronic dyspepsia. Perhaps such food as that succeeds because it must be closely similar to the food of primitive man. Anthropoid apes live on leaves, young green shoots, some roots and barks, some meat—for example, the baboons in the Zoo are known to catch and eat grey squirrels and birds. Such food is, in essentials, not far removed from the meat, greens, and fruit diet I have spoken of.

Dr. Chalmers Mitchell says people kill their tame monkeys with cereals. The misuse of cereals causes an incalculable amount of disease and death amongst mankind.

The production and use of cereals has, according to Sir Arthur Keith, made civilization possible. With the change of habits that came when the hunter became the husbandman there came no corresponding change in anatomy. The human digestive tract is still that of man the hunter. In youth and health it (the human digestive tract) is elastic and adaptable enough to manage with a very wide range of kinds of food. But just as presbyopia comes with age so does less adaptability in the matter of food. Many dyspepsias of middle life are due to persisting in the diet that did well enough in youth. More or less of a return to or towards the meat-fish-greens-fruit diet is indicated.

Starchy food must be surrendered judiciously; and hydromel—that is to say, honey and water—an eggcupful at a time, is occasionally useful as a drink for odd moments in persons who give up a good deal of starchy food but feel weak without it. (I understand the levulose in the honey requires very little labour at the hands of the liver.)

The starchy food that is best tolerated is porridge at breakfast. The porridge should be made in the old Scottish way, scattering the meal into *boiling* water and stirring the while. The importance of this detail is that the aleurin envelopes of the starch granules should be burst so that the starch becomes mucilage. Ptyalin is said not to digest starch unless it is boiled. It is hard to accept this limitation. What was the ptyalin for, before men learned to cook?

Dyspeptics should not eat starchy food and meat at the same meal. (See reference above to Pavlov.) From that embargo surprising consequences flow—for example, a sandwich of meat and bread is an example of forbidden food, so is a pork pie, so is a plate of meat and potatoes, so is fish and bread-and-butter, so is a sausage, which is a mixture of meat and bread. On the other hand, a sandwich of cold boiled bacon (which is practically fat) and brown bread is permissible. This is important in working-class practice where dinner has to be carried out.

A useful formula for middle-class people is "fish one day, liver two, meat the rest, but chicken on saints' days." (The last phrase is not intended literally.) The potato dinner may be substituted for one of the meat days.

Amylaceous dyspepsia used to be thought to be associated with fermentation of starch delayed in the stomach and consequent gas production. This, so stated, is now known to be seldom true (apart from pyloric obstruction.) Amylaceous dyspepsia is associated with constipation.

Since 1872 the stone mill has gradually been replaced by the steel roller mill. The rise in the sale of patent aperients has gone up concurrently. Wholemeal flour will not keep, because the germ contains a ferment. Attempts to stabilize it, by treating the germ with superheated steam, succeed, at the expense of destroying the thermolabile moiety of the vitamin B. It is better to use wheat freshly ground. I don't know whether the vitamin B has more to do with preventing constipation than cellulose. The diet which keeps Eskimos in health contains no cellulose, but the vitamins are there got second-hand through the organs and fat of the animals and fish eaten. I suppose they, in their turn, get them from smaller creatures—crustacea, myriad copepods—and those get them from the vegetable *plankton*, algae and diatoms. So that the Eskimo gets them really fourth- or fifth-hand, not second-hand. The substitution of manufactured food, imported into Labrador, for the traditional diet, which was similar to that of Eskimos, has, I understand, been followed by illness and physical degeneration.

The commonest sort of dyspepsia is due to constipation, producing reversed peristalsis in the jejunum and duodenum, and in the ileum too. The greatest pain probably happens an hour or so after meals, when the pylorus closes against this reverse peristalsis. The gentle reversed peristalsis which may in healthy digestion wash a little alkaline chyme back into the stomach at about the same interval after a meal, finds the pylorus a compliant janitor. But to the backward surge of the dyspeptic he is at first adamant. Constipation enough to call forth these effects may be present in spite of a daily action. To eat with cold feet seems to invite an aggravation of the reversed peristalsis.

The condition of amylaceous dyspepsia *plus* constipation must result in different intestinal bacteria predominating from those which predominate in full health when the

rectum is emptied fairly soon after it is filled. Comparative studies of the ecology of the constipated and normal intestine would, I think, reveal a very different flora.

The "climax association" (as I think the ecologists call the most permanent partnerships of living things*) in severe types of chronic constipation may show a haemolytic streptococcus dominant and thus explain the anaemia. Other bacteria in the small gut may be engaged in fermentation of kinds which do not go on in health. To that extent there still may be truth in the old idea that amylaceous dyspepsia may be due to fermentation, even though the stomach itself be exonerated.

To reverse the diet from the civilized prepared cereal food to the polite equivalent of an uncivilized diet is a great means of health to such people. But they cannot wait, and medicines may give quicker relief. The best I have found is iodine and cajuput:

℞	Tr. iodi		ɱx
	Ol. cajuputi		ɱiij
	Mucilag.		q.s.
	Aquam	ad	ʒj

Sig.: t.d.s.; 10′ a.c.

Its action seems best explicable on the theory that some of the symptoms are produced by fermentation. A laxative will be required for a time, such as the popular emulsion of paraffin with agar and phenolphthalein, but only for a time.

CAVERNOUS SINUS THROMBOSIS WITH RECOVERY.†

BY

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CAVERNOUS sinus thrombosis is comparatively rare and all authorities describe it as a fatal condition. Parsons[1] says "the patient always dies." McCallan,[2] opening the discussion at the Ophthalmological Society of the United Kingdom last year on the diagnosis and treatment of inflammatory affections of the orbit, refers to it as "this fatal affection." The most favourable views I have found are Posey's,[3] "barely 7 per cent. of cases recover," and Collins and Mayou's,[4] "if the clot be septic death usually follows, but in aseptic cases the patient may live; the exophthalmos continues, optic neuritis with atrophy following."

Most authorities, I believe, base their conclusions on their study of the condition in European patients. The wonderful powers some South African natives have of resisting certain infections may account for the survival of the patient whose case is now to be described.

A Kafir woman, aged 30, the mother of seven healthy children, was sent to me by Dr. Ella Britten on August 18th, 1922. She was thin, weak, and flabby, with quick pulse, and had her year-old baby with her—still at the breast.

The history she gave me—and I must emphasize the vagueness of the native where exact dates and figures are concerned—was that her eyes were perfectly well until shortly after this last baby's birth. The confinement had been severe, and recovery long delayed. Pain began in the left eye with headaches; the eye got red and very large, and pain was also felt behind the left ear. Dr. Britten saw her when this left eye was proptosed—a most valuable observation as regards subsequent diagnosis. The patient says this condition lasted some months, and then the right eye went through changes similar to those of the left, while the latter decreased in size. Eye pain and headaches were also similar.

On the date of her first visit the right eye was proptosed directly forwards to the extent of three-quarters of an inch. Chemosis was so marked as entirely to conceal the lower lid. Conjunctival congestion was trifling and limited to the upper part of the bulb. The ciliary vessels showed no fullness. The cornea was exposed fully, but three-quarters of its surface could be covered on effort. It was hazy and oedematous but still bluntly sensitive, and gave a mottled staining with fluorescein. The pupil was semi-dilated and insensitive to light. Tension was soft—17 mm. Schiötz. The eyeball was fixed and could not be moved by effort. The media were clear, allowing for corneal haze. The disc was somewhat pale. The field of vision was diminished between the macula and nerve-head. Right vision: 6/36; c. + 2.00 sph. = 6/24. Left vision: able to count fingers at 6 feet.

The left eye seemed fairly normal, though deviating upward and outward. No inward movement was possible beyond the mid-line, and fixation was difficult and transient. The pupil was

enlarged and very sluggish even to strong light. The media were clear. The disc was pale on the temporal side; its edges were sharp, and its vessels were not enlarged. The tension was normal. No bruit was complained of or listened for over the frontal region. She was ordered a simple boric lotion, the cornea being protected by a pad and bandage over boric ointment.

On August 28th the proptosis was less. The cornea was clearer and could be entirely covered by the upper lid. A photograph was taken.

On September 4th there was slight movement up and down of the right eye. The conjunctival chemosis was pricked and sanious fluid let out, which considerably lessened the proptosis.

On September 9th the condition was as before; the conjunctiva was again pricked with good result. On this date the patient was shown at a British Medical Association meeting and agreement was expressed with the diagnosis.

Five days later she began taking a mixture containing potassium iodide in moderate doses, and at her next visit, on September 20th, she looked and felt better. The proptosis now allowed a finger-tip insertion between the bulb and bony orbit above. Movement was increased in all directions. Her visual acuity remained unchanged. The potassium iodide in the mixture was reduced to 2½ grains in each dose, as signs of iodism were present.

I did not see her again till the following January. Though the eye had changed little in appearance, vision was now reduced to counting fingers at two feet. The field of vision also was much lessened. The cornea was dull and hazy, and it was impossible to make a detailed examination of the fundus. She said she felt stronger and better, but still complained of occasional pain in the eye region and the vertex.

It was four years later when I next saw her—February 4th, 1927. The right eye was now quite shrunken into the orbit, and, of course, absolutely blind. The left eye seemed just as at her first visit, both in appearance and acuity of vision. The field of vision was absent on the temporal side right up to fixation point. The disc was as before, but a speckled pigment area was seen impinging on its temporal edge.

In March of this year (1929) she came again. The general health had improved but the condition of the eyes remained unaltered. A photograph taken on this date (March 7th) shows a somewhat healthier and happier-looking woman. I may add that she now earns a little as a blanchisseuse.

However fortunate one may deem oneself in having seen any stage of this case, one must regret the absence of such opportunity in its early stages and before it was seen by Dr. Britten. The definite fact remains that the trouble began in one eye and then appeared in the other. This ensuing bilaterality, which occurs in most cases, has been insisted upon by authorities as a characteristic in distinguishing cavernous sinus thrombosis from orbital cellulitis—the affection most likely to simulate it. A simultaneous cavernous sinus thrombosis of both sides is well known in certain cases of sphenoidal air sinus disease, the close proximity of these sinuses to the cavernous sinus affording an explanation. Immobility was no doubt due in part to paralysis of the ocular nerves, as they lie embedded in the cavernous sinus wall, and in part to venous congestion—all ophthalmic veins emptying into the cavernous sinus.

* For example, heather, Scots pines, and cross-bills.

† Read before a meeting of the Medical Association of South Africa (B.M.A.), April, 1929.

It is interesting to note the low tension of the right eye and to compare it with Foster Moore's[5] observations on intraocular tension in cases of thrombosis of the retinal veins. He states that "in most cases of thrombosis of the central retinal vein the intraocular tension of the affected eye is appreciably less than that of the unaffected eye."

In speculating on the cause in the above case, one is handicapped by the late date at which medical advice was sought. Of the three usually assigned causes—infective, primary or marasmic, and traumatic—I think the first the most likely. It is suggested by the severity of the confinement, prolonged convalescence, and the absence of a history of any head, face, or ear lesion. Statistics also show that the great majority of cases of cavernous sinus thrombosis are of infective origin.[6 7]

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PREVALENCE OF ENCEPHALITIS EPIDEMICA IN CHINA.

A CONTRIBUTION TO THE HISTORY OF THE DISEASE IN THE FAR EAST.

BY

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CRUCHET's latest contribution to the literature of encephalitis epidemica has aroused increased interest in the question of the origin of this disease, and since recently a writer published an article suggesting the possible introduction of encephalitis from China, it seems desirable that the data with regard to the history of the disease in that country should be carefully examined and more valuable material collected. I hope the following observations will serve this purpose.

When, in 1921, I returned to China I found encephalitis rather flourishing, and since that time I have observed cases everywhere in the northern, Yangtse, and southern provinces where I looked out for the disease. Encephalitis is nowadays not rare in China, although there are many medical practitioners, even in the large cities of the coastal districts, who have never seen or recognized a case as such. The fact that many medical men in China are still unfamiliar with the picture of encephalitis in my opinion accounts for the paucity of knowledge and documentary evidence of the disease in that country.

The first publication on the appearance of epidemic encephalitis in China was written by W. W. Cadbury,[1] who observed one case in Canton as early as August, 1919. In 1920 Judson[2] described two cases from Anhwei province, and Lennox[3] another case which he had seen in Peking. Later, in the winter of 1921–22, two cases were reported by Wassell[6]—one from a hospital in Wuchang and another from Changsha in Hunnan. With the opening, in 1921, of a special neurological department of the Peking Union Medical College the opportunity for seeing a large number of neurological cases was given, and thus A. H. Woods was able to report on twenty-one cases which he had seen within the first year of the new institution's existence.

During my activities as neurologist at the Peking Union Medical College I made a special study of encephalitis, and the following report comprises my observations on a hundred cases seen during the period of two and a half years (1923-25). The following are the places from which the cases came:

Peking	53	Shanghai	3
Peking (country) ...	13	Mukden	2
Tientsin	7	Chefoo	2
Peitaiho	4	Tsingtao	1
Foochow	4	Kalgan	1
Shansi	3	Chengtu	1
Paoting	3		
Nanking	3		100

As the list shows, more than half of the patients came from Peking or its immediate neighbourhood, most of the others from places situated at the coast or near the lines of railway traffic. Szechuan was the furthest interior province from which a patient was sent to us.

The earliest of our cases was a student who gave a reliable account of his disease, the onset of which he dated back to the beginning of the year 1919. For its historical interest the case might briefly be described here.

The patient, aged 25, states that when he was in Shanghai in March, 1919, he had fever for ten days, with dizziness and double vision, followed by sleepiness, which continued for several weeks. Since 1922 he has suffered from difficulty of speech, increased salivation, and involuntary movements of the head and hands. Clinical examination elicited the following signs: typical Parkinsonian posture and gait; myoclonus of the left sternomastoid muscle; tremor of both hands; dilated pupils, absence of reaction to light, and paresis of the rectus internus muscles; exaggerated tendon reflexes; negative Wassermann reaction.

Four other patients were admitted who had contracted the disease in the same year, one in July in Foochow, the rest in the autumn in Peking, Paoting, and Tai Yuan (Shansi). The number of admissions of encephalitic cases gradually increased from year to year, probably partly owing to the growing interest of the medical men who had sent these patients to us for further study. There were, in addition, small epidemics in Peking and its neighbourhood, such as in Peitaiho, a health resort at the seaside, where for several years regular outbreaks occurred during the hot summer months. The first cases at the latter place, of which I examined one myself in 1921, displayed rather fulminating symptoms. Four patients died in quick succession; in later years the character of the disease became much milder.

With regard to the season, the frequency curve shows that new cases appeared the whole year round, but, as also happened in other countries, a marked rise was noted, especially in 1923 and the following year, during the winter months December to March, which in northern China form the cold, dry season with dusty winds—the season of catarrhs of the respiratory tract. A second but slighter elevation of the curve set in with the beginning of the dry season in August. On this occasion it is interesting to compare the great outbreak of a special form of encephalitis in Japan in 1924, which occurred in a remarkably dry summer and abated with the onset of the wet season. Most of the patients were between puberty and middle age; the youngest was 5 months, the oldest 61 years of age. Among the 100 cases there were only 20 females; 82 were Chinese, the rest foreigners. Farmers were less affected than people leading a sedentary life; the highest incidence was among the students, with 27 cases; soldiers, who furnished the richest material in neuro-syphilis, were represented only by a single case.

The clinical picture of epidemic encephalitis is essentially the same as in Western countries, and the Parkinsonian type, which occurs in 35 per cent. of all cases, represents the largest group. The earliest appearance of Parkinsonian manifestations was noticed three months after an acute onset with fever, oculomotor symptoms, and lethargy. In most other cases about two years, or even a longer time, had elapsed between the initial symptoms and the first kinetic disturbances. Marked sleepiness was one of the most constant features in the history of this group. In some, especially in young patients, the akinesia reached a very high degree. Neglected by their family, emaciated to the bones, and motionless like a statue, these unfortunates would easily impress the people as beings possessed by some kind of evil demon.

The greasy appearance of the face, a characteristic sign in European patients, has not the same striking significance in patients of the yellow race, since in the latter the skin has already a somewhat shiny appearance. In most cases the oculomotor nerve was involved, with partial paralysis of one or several muscles. In 5 cases ocular crises were observed, with temporary tonic fixation of the eyeballs in an upward direction. Twenty cases belonged to the purely hyperkinetic type, displaying all grades, from the most minute tremor of the lips or hands to coarse choreiform movements of one or several extremities; in the worst cases the whole body was shaken with an intensive general tremor.

Of acute cases, beginning with fever, headache, joint pains, and sleepiness, 25 patients were admitted, of whom 3 with very grave symptoms died a few days after the onset. In one case a post-mortem examination was performed, and the microscopic findings showed an extensive perivascular as well as intrathecal cell infiltration, and degeneration of ganglion cells, most marked in the substantiae nigrae of either side and in the area of the oculomotor nucleus.

As a separate group I should like to consider 15 cases of bulbar forms. They had the character of a small epidemic of a benign nature, and were observed during the winter of 1924 in Peking. Besides ptosis and diplopia, bulbar symptoms were the most prominent features, with difficulty in speech and swallowing and paresis of the accessory nerve. Several of these patients had suffered from a previous catarrh of the upper air passages, and in 5 cases of a striking similarity the possibility of a direct contact infection in the hospital cannot be entirely excluded.

In the same winter a number of cases were seen, monosymptomatic forms with some kind of oculomotor disturbance or more or less marked lethargy, which in my opinion must be classified among the abortive forms of encephalitis epidemica.

The question of the routes by which the encephalitis found its way into China is interesting. Three main possibilities have to be considered.

First, the invasion could have taken place from the east, from America by way of the Pacific and Japan. In its course westward from Central Europe the steps can be traced by which encephalitis gradually reached first the east of England, then its western side, during the spring of 1918, and the east coast of America at the end of 1918. But in the western parts of America the disease was not noticed until the autumn of 1919. Thus, since in China a case had already occurred in March, 1919, it does not seem likely that the infection came the long way over sea from America.

The second route by which the disease could have been introduced is by way of Siberia. In Russia encephalitis had been observed some time before 1919, but in its eastern parts apparently not before the end of that year. At that time the trans-Siberian railway line was still interrupted at various places, and there was as yet no through traffic to China by this route. From investigations I learned that the first cases appeared in Harbin and Mukden at a date later than the autumn of 1919, when the first case was observed in Peking. It seems to me much more probable that the cases in Peking originated in infections from the south along the railway line from Shanghai.

The third possible way is by the most frequented route of sea traffic from Europe by way of India to the ports of China. This appears to be the most probable path by which the encephalitis travelled, for the disease made its first appearance in the southern ports of China, following a course similar to that of other epidemics entering China from the west.

There is another fact which speaks for the great probability of the introduction by the southern route. In the same year that the first cases were known to have appeared in China a small outbreak of encephalitis had been observed in the military barracks in Karachi, and in July, 1919, on the Andaman Islands, which are situated about midway between India and China. Thus it seems quite possible that soldiers were the carriers of the disease to the Far East. I may mention here that in Japan the disease appeared approximately at the same time as in China, probably introduced along the same lines of transmission.

There remains another possibility, explored by Dr. A. J. Watson in a paper entitled "The origin of encephalitis lethargica," which was published in the *China Medical Journal* for June, 1928, and subjected to some criticism in a leading article in the *British Medical Journal* of August 18th of that year. Watson claims to have seen a case of encephalitis in Yunnanfu in 1927, the onset of which, according to the statements of the patient and his friends, was dated back twelve years—that is, to 1915. The case was seen only once in the out-patients' department, and was not thoroughly studied, as Dr. Watson's assistant, Dr. H. P. Yew, admitted in a note in the *China Medical Journal* for January, 1929. A second case seen in 1927 with an eight years' history would have started in 1919, in the same year in which, as we have seen, encephalitis had already made its appearance in other parts of the south and east of China. The rest of Watson's cases are of a still later date. Thus his theory of the origin of the disease in Yunnan practically rests only upon the poor evidence of one inadequately investigated—which is hardly enough to serve as a basis for a new theory.

But even if we could accept this "early" case as proven, we need not assume that the disease really originated in Yunnan. I can offer another much more probable explanation. From my personal experience and further inquiries I am able to state that soldiers from Indo-China were engaged in the battle zone of Verdun, where the first cases were reported to have appeared in 1915, and that in the same year Annamite troops from this front returned to their homes. The railway connecting the coast with Yunnanfu was already in existence, and the infection could thus have been carried within a short time into the heart of Yunnan province. Remoteness and isolation—factors which Watson further mentions in support of the endemic nature of encephalitis in Yunnan—are only relative conceptions; even the poorest traffic would suffice to convey the virus of an epidemic disease by one or the other means.

In 1926 I expressed the view that encephalitis lethargica was introduced into China from the southern ports; I consider it probable that another way in which the disease may have entered China was through the native soldiers of Indo-China. If the disease had originated in Yunnan and thence spread to other parts of the world, especially to the west, we would have seen quite a different epidemiological picture.

SUMMARY.

Encephalitis epidemica is known to have appeared in China early in 1919 and to have spread along the lines of frequent traffic.

In its clinical aspect the disease does not differ essentially from its behaviour in Western countries. The Parkinsonian symptom-complex is the most common sequel.

The epidemic character has been less obvious in China than in Europe, but a few small epidemics have been observed in the north of the country.

There is no evidence that encephalitis has its origin in one of the provinces of China, but enough satisfactory evidence exists to support the assumption that the disease was introduced through Indo-China, and through the ports of the southern and eastern coast of China by means of the sea traffic from Europe through the Indian Ocean.

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CEREBRAL ABSCESS FOLLOWING ACUTE TONSILLITIS.

BY

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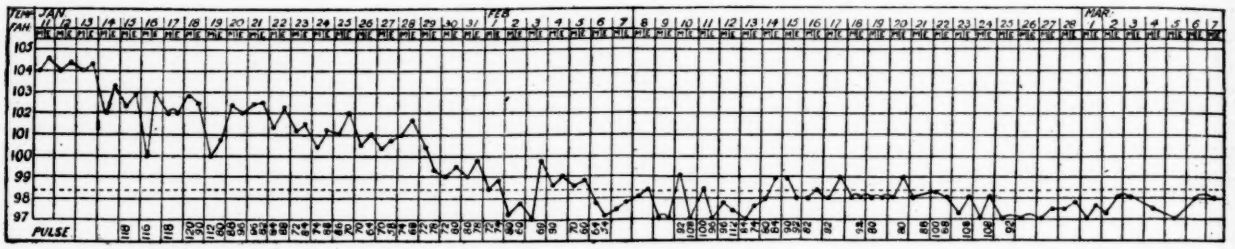
THE sequence indicated in the above title is sufficiently rare to make the following case worth recording. No reference could be found in the literature of the subject to a case of cerebral abscess secondary to throat conditions, although foci of sepsis in the lungs, cardiac valves, liver, and bones are mentioned as possible causes. Other remarkable features of this case were the patient's apparent complete recovery after an illness of six weeks' duration, in which he had for a period of a month shown unmistakable signs of an intracranial abscess, and then his comparatively sudden death.

A plumber, a healthy, well-built lad of 18, with no history of previous illness or ear trouble, was first seen on January 11th.



He had been out-of-sorts for several days, and complained of a sore throat. His temperature was 104° F., pulse 120, and respiration normal. The fauces on both sides were intensely injected, together with the posterior pharyngeal wall, which was covered with a muco-purulent exudate. No other physical abnormality could be found. His temperature remained as high for several days, with slight variations in the throat condition, and a good deal of general disturbance. On January 14th the temperature fell to 102°, and remained at this level for the following week, with a relatively slow pulse below 100. On the same day he commenced to have rigors once or twice daily until January 17th, when the tonsillitis began to localize as a peritonsilar swelling on the left side. On January 19th ptosis of the left eyelid and a left internal strabismus were noticed, associated with periods of "sleepiness," although the patient was quite rational when roused. He had some headache, aggravated by attacks of coughing coming on at hourly intervals, in which he expectorated a muco-purulent sputum. On January 18th he was given 1 c.cm. of "S.U.P." intramuscularly, and on January 20th a second injection of this and 25 c.cm. of polyvalent antistreptococcal serum, without obvious effect.

On January 21st he was seen in consultation with Dr. C. E. Lakin, who found rigidity of neck muscles, modified Kernig's sign, left knee-jerk absent, right just present, plantar reflex flexor, ptosis of left eyelid, internal strabismus of left eye, with much congestion of the retinal vessels on this side. The throat still showed some peritonsillar swelling on the left side, but Dr. Lakin detected no abnormality in the chest or abdomen, and suggested the presence either of a cerebral abscess or a basal meningitis. Removal to hospital was advised, but consent was refused.

During the following week the nervous symptoms varied. The ptosis became less noticeable, although the strabismus remained throughout. The neck rigidity continued, with a doubtful Kernig's sign. On January 23rd and 24th all reflexes, except the superficial abdominal, could be obtained. At times the patient seemed sleepy, but he was bright mentally, and his fever continued in the region of 101°, and his pulse rate from 60 to 90 per minute.

On January 25th scattered dry rhonci were found on both sides of the chest, with moist crepitations at both bases, associated with a purulent sputum which, on examination, was found to contain pneumococci, *B. influenzae*, and staphylococci. The cough, which still only occurred infrequently, continued for several weeks, and then entirely ceased.

Nothing further of note happened until the morning of February 2nd, when at 6 o'clock, following an hour's incoherent speech, the patient commenced to have fits. They began by a deviation of the head and eyes to the right, with marked lateral nystagmus and hippus of both eyes. Then followed a clonic convulsion, originating in the right side of the face and spreading to the neck and jaw muscles. Between 6 and 9 a.m. fifteen occurred, and in the more severe ones the convulsion spread to the right and left arms and involved the entire musculature. The knee-jerks remained present, and an ankle clonus was obtained on the right side. No further fits took place, and the next day he was conscious, but at times was "muddled" in his speech. On February 4th he was very delirious, but by February 8th he was comatose, and rolled his head continually from side to side. The temperature was now subnormal, and the pulse rate varied from 54 to 90 per minute. He had become very emaciated.

He was still unconscious on February 9th, when he was seen with me by Dr. D. G. Leys. He found a bilateral ankle clonus, but could obtain no reliable evidence from the reflexes to point to a unilateral cerebral lesion, nor any definite optic neuritis in either eye, but suggested that exploration of the brain was worth considering after further investigation in hospital. Unfortunately no permission for the patient's removal to hospital could be obtained.

From February 10th to 16th the patient remained in a semi-comatose condition, and nutrition was only kept up by rectal feeds of 5 per cent. glucose. Death seemed the only possible issue, but on February 16th he regained consciousness, began to take nourishment, and by February 18th seemed quite normal mentally, although a little excited. The following day an abscess, which had gradually formed on the back, at the site of the serum injection, was opened, and a greenish-yellow pus was evacuated. By February 25th he seemed well in every way, was eating solid food, sleeping well, putting on weight, and normal mentally; he was allowed up for half an hour, with daily increments.

It looked as if our interpretation of his cerebral symptoms had been at fault, and that the abscess on his back had acted as a fixation abscess and brought about a cure, for his improvement was uninterrupted until March 11th. During the morning of this day he was getting about the house, but at midday he seemed sleepy, and at 4 p.m. he became unconscious, and remained so until his end was brought about at 6.30 the next morning, by what was clinically an acute oedema of the lungs.

A post-mortem examination, confined to the brain, performed with the help of Dr. Allen Piggot, revealed an abscess about the size of a walnut in the tip of the left temporo-sphenoidal lobe, with some adhesions between the surrounding pia mater and dura. There was no sign of bone infection in the skull.

It may be pointed out that the cerebral symptoms had already appeared before any abnormality could be detected in the lungs, so that it is probable the cerebral abscess was a direct complication of the acute tonsillitis.

Any incompleteness in these notes is due to the fact that they were gathered in general practice, and that, owing to the refusal of the patient's parents to agree to his removal to hospital, the clinical observations and partial post-mortem examination had to be carried out in a small artisan dwelling.

My thanks are due to Drs. C. E. Lakin, D. G. Leys, and Allen Piggot for permission to associate their names with this case.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF PHYSOPYOMETRA WITH PERITONITIC ABSCESS.

MOST of the reported cases of physometra (gas in the uterine cavity) have been associated with septic abortions or other complications of the puerperium. In such cases the symptoms are usually very grave and the issue fatal. The organisms concerned are frequently *B. welchii*, anaerobic streptococci, and *B. coli*. Chronic pyometra is a condition more common, and occurs where retained uterine secretions have become infected, as in senile and tuberculous endometritis, malignant disease of the body or cervix, and suppurating fibromyomata.

History of Case.

The patient, a woman aged 65, was admitted, on January 6th of this year, complaining of offensive vaginal discharge and haemorrhage. She was married, and had two children, aged respectively 29 and 24. She had ten or twelve miscarriages before the birth of her first child.

Fibromyoma uteri was diagnosed thirty years ago, but no treatment had been received. The menopause occurred twenty-three years ago. Three years ago she had slight vaginal haemorrhage, and several floodings had occurred during the last two years. A greenish offensive vaginal discharge had been present for the last three months.

She was admitted with an abdominal tumour, arising out of the pelvis to the level of the umbilicus. There was a copious purulent vaginal discharge. Temperature 100° F., pulse 98.

Total hysterectomy was performed by Mr. Victor Bonney. Both tubes and ovaries were removed. There was a small localized peritonitic abscess in the neighbourhood of the fimbriated extremity of the right tube. The appendix was not in the immediate vicinity, did not appear to be involved, and was left *in situ*. The patient made an uninterrupted recovery.

The uterus contained multiple fibroids of varying sizes. Some were cystic and some calcareous. The uterine cavity was distended and fluctuating. On opening the cavity a considerable quantity of gas escaped with a hiss, followed by 1½ pints of greenish-yellow pus with a *B. coli* odour. A soft, friable, fungating mass involved the endometrium and uterine wall in the region of the fundus. Sections from this area showed an adeno-carcinoma corporis uteri. The remainder of the wall of the cavity was lined by a rough pyogenic membrane. Both tubes contained pus. The lumen of the extremity of the left tube was occluded, and it was distended.

My thanks are due to Mr. Victor Bonney for permission to publish the notes of this case.

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RAT-BITE FEVER FROM THE BITE OF A PIG.

THE following case is of so unusual a nature that it seems worthy of recording.

On March 20th a woman, in feeding a small pig with a bottle, was bitten on the forefinger; the wound bled slightly and healed normally. On April 4th it began to swell, and continued to swell and become increasingly painful for four days, on the last of which I saw it for the first time. The terminal phalanx was extremely swollen and tender, and I proposed to incise it, but for domestic reasons she wished it postponed to the next day. On April 8th it was excised freely under gas; no pus was found and there was very little bleeding at the time; it bled normally later and the pain was relieved considerably. Boric fomentations were applied, but there was no discharge, and the next day the wound was almost healed.

On April 11th there was a red line of lymphangitis, a temperature of 101°, and the finger was more painful. Gas was given again and the wound was opened up more freely on both sides of the finger and at the root of the nail; a little clear serum escaped. The temperature did not subside, and she developed red nodules very similar to erythema nodosum along the arm and a few on the legs, abdomen, and neck. Owing to nursing difficulties she was moved into hospital and the arm kept in a eusol bath. The temperature then became normal, and remained so from April 16th to 20th, when it again rose to 100° and on the 21st to 104.8°. On April 22nd the temperature was 99° in the morning and normal by evening, and remained normal until April 25th, when it reached 100° in the evening.

Sir William Willcox, to whom I mentioned the case, agreed that it was a case of rat-bite fever, though he had never heard of a case occurring as a result of a pig bite, and on his advice 0.6 gram of novarsenobenzene was given, after which the temperature fell to normal in twelve hours and has remained so. There was considerable desquamation of all the nodules and arm where the lymphangitis had occurred. Recovery was quite uneventful, except for an attack of urticaria two days after the injection.

Chelmsford. R. P. SMALLWOOD, M.B.

EXCESSIVE HAEMORRHAGE AFTER TOOTH EXTRACTION, DUE TO ACUTE LEUKAEMIA.

THE case here recorded, in which the extraction of a tooth was followed by excessive haemorrhage, resulting in death of the patient, seems of sufficient interest to warrant publication.

An unmarried girl, aged 17, was admitted to the Salford Royal Hospital on April 25th last as a case of excessive haemorrhage occurring after tooth extraction. The second left upper molar tooth was extracted on April 18th, and she had bled continuously from that time until her admission—that is, for seven days. She had never previously had a day's illness in her life. Menstruation had started the day before.

Condition on Admission.—She was very pale, anaemic, almost moribund. The mouth was septic. The tooth socket had stopped bleeding. Temperature 97° F., pulse 140, respirations 34. No other abnormalities were noticed at the time.

She was given rectal salines, digitaline, and mouth washes, and rallied slightly. The next day a transfusion of one pint of blood from her father was given, and there was immediate temporary improvement. Bleeding started again, however, in a few hours' time, but not much blood was lost before the heart suddenly failed and she died on April 26th at 7.30 p.m.

A necropsy revealed amongst other things multiple haemorrhages into the heart muscle, lungs, upper surface of the diaphragm, and suprarenals; intense fatty change in the heart, liver, and kidneys. The spleen was not enlarged and was macroscopically normal. A generalized slight enlargement of lymph glands was present. Free blood was present in the peritoneal cavity and there was a great deal of blood in and around the left tube and ovary (Graafian follicle especially); the condition of the left tube and ovary was such that in certain circumstances—for example, an abdominal section—it might quite easily have been mistaken for a ruptured ectopic pregnancy.

Stained sections of the liver and spleen were reported on as acute lymphatic leukaemia. A blood smear taken even seventy-two hours after death showed lymphocytes to be almost as numerous as the red cells.

The parents, convinced that the dental extraction had caused the girl's death, precipitated an inquest. At the inquest it was maintained that: (1) Death was due to acute lymphatic leukaemia. (2) There was internal haemorrhage, sufficient in amount and situated in such a way as to account for death quite easily. (3) It was impossible to say that the extraction had accelerated death, and probably it was a coincidence.

Mr. J. B. Macalpine, under whose care this case was, kindly gave permission to write this note.

W. C. D. WALMESLEY, M.B., Ch.B.,
House-Surgeon, Salford Royal Hospital.

Reports of Societies.

RESULTS OF THE OPERATIVE TREATMENT OF ENDOMETRIOMATA.

AT a meeting of the Obstetric Section of the Royal Society of Medicine, with the president, Dr. J. S. FAIRBAIRN, in the chair, Mr. CHARLES D. READ and Mr. FREDERICK ROQUES communicated a paper on after-results of the operative treatment of endometriomata—a study of forty-one cases.

In spite of the large amount of literature on endometriomata, the authors found but few references to the treatment of these tumours. They quoted Herd and Sampson, the latter author having reported 23 cases but given details of the results of treatment in only 10. A detailed study of the authors' cases followed. They were divided into five groups: (*a*) ovarian, 25 cases or 61 per cent.; (*b*) uterine, 11 cases or 27 per cent.; (*c*) abdominal scar, 3 cases or 7 per cent.; (*d*) recto-vaginal space, 1 case or 2 per cent.; (*e*) umbilicus, 1 case or 2 per cent. Tables were shown giving full clinical details in each of the 41 cases, with the treatment and the condition of the patients at the time of writing. The results of treatment in each group were then analysed. The ovarian cases fell into two groups: (1) Cases in which the growth had been excised from one or both ovaries or in which one ovary only was removed in its entirety; in other words, all ovarian tissue was not removed at operation. (2) Cases in which both ovaries were completely removed or in which complete removal was attempted, with or without concomitant hysterectomy. Of 14 patients in whom one ovary or part of an ovary was left 10 were cured, 2 improved, and 2 remained unrelieved. These two patients were later treated by more radical measures, bringing the total number of operations in the ovarian group to 27. Of 13 patients from whom all ovarian tissue was removed 10 were cured, 2 improved, and 1 remained unrelieved. The uterine cases were similarly divided into two groups. (1) Cases in which the growth was excised from the uterus. (2) Cases which were treated by hysterectomy—total or subtotal—with or without concomitant hysterectomy. In 2 cases the growth was excised from the uterus. One patient was cured, the other improved. Nine cases were treated by hysterectomy. The authors remarked that removal of the ovaries with the uterus did not influence the result in cases treated by hysterectomy, and suggested that the question of oöphorectomy in uterine endometriomata should be determined by the age of the patient and the degree of implication of the ovaries with the uterine growth. The remaining cases—3 abdominal scar, 1 recto-vaginal, and 1 umbilical—were treated by local excision. Comment was made upon the relatively low incidence of recto-vaginal tumours in this series. The results of the two forms of

treatment—conservative and radical—of 43 operations on 41 patients, were then reviewed. Of 21 patients treated conservatively 15 were cured, 4 improved, and in 2 symptoms persisted after operation. Of the 22 patients who were treated radically 19 were cured, 2 improved, and in 1 no relief was experienced. The most striking fact which emerged from these figures was the high "cure rate" of conservative treatment, which in the authors' opinion was the treatment of election in all patients under 38 years of age in whom the local conditions of the growth—for example, extensions involving the bowel—were not unfavourable. They again quoted Sampson, who reported three pregnancies among five patients treated by conservative operation. The advantages of local excision were that the operation was less severe and probably attended by a lower operative mortality, there was a possibility of subsequent pregnancy, and, usually, continuation of the menses. Against those advantages the chance of recurrence was to be weighed. This risk was more than justifiable in the young patient, whenever local conditions permitted. Only very occasionally in extensive lesions was complete clearance of the pelvis indicated, irrespective of the patient's age. For the older patient more extensive measures were recommended. The advantage claimed was the complete success with which they were attended, although the mortality might reasonably be expected to be higher. In the series of cases under discussion this consideration did not apply, as the mortality was *nil*. Post-menopausal retrogression of endometriomata was mentioned in connexion with the disappearance of the outstanding symptoms of dysmenorrhoea and menorrhagia. In patients near to the climacteric operation was only justifiable in those cases in which the tumour was causing the mechanical symptoms of pressure and intestinal stenosis. The value of radium in treatment was discussed, and the authors referred to one of their cases in which radium proved successful after three laparotomies had failed. They favoured the use of radium in selected cases, but thought it doubtful whether radium would ever be applicable to ovarian or to uterine endometriomata, for the reason that diagnosis, in many cases, was very difficult, in some cases almost impossible. In particular, the difficulty of excluding pelvic inflammation as an alternative diagnosis would make most hesitate to advise radium treatment for endometriomata of the ovaries or of the uterus.

The following factors influenced the method of treatment in any given case. (*a*) *The age of the patient.* The younger the patient the stronger was the indication for conservative treatment, except in large tumours with extensive infiltration of surrounding structures. (*b*) *The extent of the lesion.* This influenced the decision between "conservative" treatment, on the one hand, and "radical" and "radium" treatment on the other. Conservative treatment was indicated for a limited growth in young patients, radical operation for all extensive lesions in patients over 38 years of age, especially in the presence of mechanical symptoms. Radium was a useful adjunct in inoperable cases and in cases in which radical operation had failed. (*c*) *The site of the lesion.* Ovarian endometriomata lent themselves to both forms of surgical treatment depending on the factors already considered. Uterine endometriomata should be similarly treated, remembering the governing principles of age, extent, and parity. Conservative treatment was less frequently possible than in the case of the ovarian tumours. Endometriomata in the recto-vaginal space, if accompanied by uterine or ovarian involvement, demanded radical operative treatment. Localized tumours lent themselves to both local incision and radium therapy. Scar and umbilical endometriomata were satisfactorily treated by local excision. In these situations radium was a possible alternative; but its use had not yet been exploited.

A Gigantic Foetus.

At the same meeting Dr. E. LAWTON MOSS showed a specimen of a gigantic foetus. The head had been delivered with axis-traction forceps, and the shoulders by means of traction with a blunt hook. The foetus was stillborn, and immediately after delivery weighed 24 lb. 2 oz. The sub-occipito-bregmatic diameter of the head was 5½ in., and the length from vertex to heel was 35 in. The placenta weighed 4 lb. The mother made an uneventful recovery. Dr. Lawton Moss pointed out that the enormous size of the foetus could not even in part be attributed to post-maturity, since the mother started labour a few days before her expected full term. A search through the English references had failed to reveal any reference to a foetus so large as the one shown. Dr. HERBERT SPENCER, in the discussion, suggested that the weight of the foetus was a record not only for English cases, but for all cases of this kind published in any country.

Vulval Fibro-adenoma.

Mr. A. J. WRIGLEY showed sections of two cases of adenomatous tumour of the vulva which had the histological characters of a fibro-adenoma, such as is commonly found in the breast. He said that these tumours in the vulva were very rare, or at any rate very rarely described, and as their anatomical position excluded the possibility of their arising in Bartholin's gland, and because their histological appearance differed from that of a sebaceous adenoma, he looked upon them as a distinct type of fibro-adenoma.

Pelvis of an Australian Aboriginal Woman.

The SECRETARY read a paper by Professor Cleland and Drs. Dawson, Wallace, and Hackett, the object of which was to record accurate measurements of the bony pelvis of an aboriginal woman of Australia. The measurements were taken from a pelvis removed post mortem from a woman who had died during labour. In comparison with the pelvis of a normal white woman, the most striking differences in the pelvis described were a narrow subpubic angle, and a marked diminution in the transverse diameters of the brim, the cavity, and the outlet. The pelvis, as a whole, was funnel-shaped.

A Method of Inducing Labour.

Mr. G. F. GIBBERD read a short communication recording the results of thirty cases of induction of labour undertaken by means of the introduction into the uterus of a sterile animal bladder containing glycerin. Although the method had disadvantages and dangers shared by other instrumental methods of induction, it had the one advantage that, compared with other methods, its use was attended by a considerable reduction in the time interval before the onset of pains.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

AT a meeting of the Aberdeen Medico-Chirurgical Society on June 6th, the president, Professor ALEXANDER LOW, in the chair, a demonstration of specimens was given in the pathology department, Marischal College. Professor THEODORE SHENNAN, Dr. JOHN GRAY, and Dr. R. D. LOCKHART described the exhibits.

Among the post-mortem specimens shown by Professor Shennan and Dr. Gray were two cases of cancer of the body of the pancreas, neither involving the head and both showing extensive metastases to liver, mesenteric border of small intestine, and omentum; a specimen of acute phlegmonous gastritis, showing inflammatory oedema and suppuration in all coats of the stomach wall, most extensive in the submucosa and implicating the lower part of oesophagus and upper duodenum, with Gram-positive diplococci present throughout the lesions and no evidence of antecedent ulceration or infective foci; a case of primary cancer of the left kidney, infiltrating the organ diffusely and enlarging it greatly; a case of periarteritis nodosa terminating in uraemia; a case of active glandular tuberculosis in a female, aged 72, with cervical and mediastinal glands increased to the size of walnuts but with only slight pulmonary infiltration; and specimens demonstrating widespread metastases in the myocardium, mediastinum, lungs, liver, gall-bladder, abdominal glands, bone, and pituitary gland, from a squamous epithelioma arising in an indolent leg ulcer in an individual with a positive Wassermann reaction.

Dr. Lockhart showed a dissected preparation of a rare condition, complete double aortic arch in the adult; two brains showing symmetrical psammomata of the choroidal plexus; the brain of a rabbit 4 days old, with hydrocephalus; an infantile form of appendix, lying behind the peritoneum and reaching along the ascending colon to the hepatic flexure; radiograms and photographs illustrating the position of the scapula in trapezius paralysis; and a series of radiograms demonstrating the relative amount of movement occurring in the normal shoulder-joint during elevation from the dependent to the horizontal position and from the horizontal to the vertical.

Reviews.

THE SCIENCES AND PHILOSOPHY.

CONSIDERING how much that was obscure in Nature has been explained by science, it may seem excusable to believe, as some do, that science will in due time solve for us the mystery of the universe. Such a belief, without doubt, acts as a stimulus to research, and on this account it would seem to be mere gratuitous meddling to attempt to undermine it. There is, however, another aspect of the question, and it is very ably discussed by Professor J. S. HALDANE in the Gifford Lectures for 1927–28, under the heading of *The Sciences and Philosophy*.[1] Professor Haldane has reflected on this question for some forty or fifty years, and, being a scientist, he approaches the subject in a scientific spirit and, one may suppose, with a leaning towards science. A study of his lengthy argument leads to the conviction that the advances made by science have brought us no nearer the solution of the mystery of Nature than were the contemporaries of Job; in fact, the mystery appears to deepen with each new discovery. This conclusion is of no great practical importance, but another deduction is drawn, the practical importance of which cannot be exaggerated. It is shown with a considerable degree of plausibility that the gross materialism which is a characteristic of the present time has its roots in a tendency to allow conventional and limited scientific conceptions to do duty for philosophy or, as the author defines it, the conception of the whole as distinguished from a mere part of the reality of Nature. From this tendency arose the mechanistic conception of Nature elaborated by Descartes and largely held in a semi-conscious fashion at the present time. Mechanical and physico-chemical forces appeared to explain so much that men came to think that all would ultimately be thereby explained. This was an error, for it omitted all consideration of the essential feature of living organisms—namely, the power of developing and maintaining their specific structure and of reproducing it from generation to generation. This fact is inexplicable on a purely physico-chemical theory, which is thus shown to be merely a conventional and limited conception of reality. The same is true of the vitalistic theory initiated by Stahl—namely, that all could be explained by assuming the presence of a vital principle or soul, having an independent existence in the organism and controlling the physico-chemical processes of the body. A very essential reality is omitted in this theory, one which is strongly emphasized by Professor Haldane as marking the distinction between biology and psychology as separate sciences. In unconscious living beings, such as plants, the vital reactions are determined solely by present conditions; whereas in conscious organisms ideas of the past and the future and a consciousness of interest and values are introduced as a new element—and not only the interest of the organism concerned, but also that of his fellows, present and to come. The biological or vitalistic theory, therefore, is, like the mechanistic theory, inadequate as a conception of the whole of reality. The separation of the sciences in different watertight compartments is doubtless practically convenient; the engineer need take no account of biological forces in carrying out his engineering schemes, and the surgeon can disregard psychological subtleties when performing a major operation. These are arts which call merely for a restricted and conventional view of natural forces; but the art of living needs something more than restricted views, and nothing will avail except philosophy or the "conception of reality in its totality." If an attempt is made, as above indicated, to elevate any one of the sciences into the position of a philosophy, materialism is the inevitable result. The bearing of these facts on questions of general and technical education is obvious, and is clearly expounded in the Gifford Lectures. What, then, it may be asked, is the philosophical view of life and the universe ultimately reached by Professor Haldane? The reader is recommended to procure the book and study this, the most important part of the work, for himself.

[1] *The Sciences and Philosophy*. Gifford Lectures, University of Glasgow, 1927 and 1928. By J. S. Haldane, C.H., M.D., F.R.S. London: Hodder and Stoughton, Ltd. 1929. (Demy 8vo, pp. ix + 344; 15s. net.)

HYDROGEN-ION CONCENTRATION.

THE volume entitled "*p*H in Biology"[2] by MM. MARCEL VERAIN and JEAN CHAUMETTE prompts us to reflect that aesthetic considerations have not always weighed in the choice of scientific symbols. It is, however, too late to complain that *p*H is lacking in the picturesque. *p*H has arrived; and in no field has it arrived with such assurance as in the domain of physiology. The hydrogen ion—most diminutive of molecular species known to chemistry—holds the stage, directing the activities of enzymes, controlling the restless forces of metabolism, and shaping that destiny which is thrust upon each living organism by the environment in which it finds itself. A scientific symbol is justified by works, not by faith. It is useful only in so far as it may permit a more economical description of observed phenomena. By this token *p*H has earned a place in the vocabulary of every biologist. At the same time, it has its defects. *p*H, on the one hand, represents a direct experimental observation made with appropriate instruments. On the other hand, it stands for the whole body of theory of electrolytic dissociation which is now the foundation of the treatment of all aqueous systems in which biology is interested. The dual role has proved difficult to sustain. Moreover, it is to be remembered that *p*H involves a scale of reckoning which is foreign to most of us, requiring, as it does, the mental habits of a slide-rule.

For all these reasons biologists may properly seek instruction in the mysteries of the hydrogen ion. Tempted by the comprehensive title chosen by the authors, they will be liable to disappointment unless they have been already warned by the modest dimensions of the book. This is not a wide and general survey of the significance of hydrogen-ion activity in vital phenomena. The main part is devoted to an exposition of the fundamental principles upon which the theory of electrolytic dissociation is based, particular attention being directed to those weak acids and bases which figure prominently in physiological systems. The presentation is simple and attractive, but it seems a pity that the revolution in the treatment of ampholytes which we owe to Bjerrum and Bronsted should have been ignored. The inclusion of this is urged, not because it is recent knowledge, but because it leads to a definite simplification of treatment. Detailed description is then given of the various methods in common use for the determination of the hydrogen-ion concentration of fluids, particularly of blood. For the rest, there are chapters on the hydrogen-ion concentration of the blood and of the cerebro-spinal fluid, and a catholic section of fourteen small pages roaming without aim over the fields of digestion, bacteriology, and vegetable physiology.

As a contribution to a series of monographs on practical medicine this book presumably seeks to do service to the medical profession. This it does within the restricted field covered; but we feel that the biological section suggests a narrow interest which does scant justice to so ambitious a title. This is a pity, for many seek an understanding of these matters.

THE SEXUAL LIFE OF SAVAGES.

UNTIL fairly recently the tendency both among anthropologists and psycho-analysts was to keep strictly to their respective fields, the former to a study of the variations of custom and belief among peoples of diverse races, traditions, and cultures, the latter to a study of the springs of behaviour in normal and abnormal persons in civilized society. Lately, however, a few workers in these sciences have invaded each other's territory, and found, to their surprise, that they felt almost at home. Psycho-analytic theories which deal with the significance of the sexual life in the formation of character traits, and the determination of behaviour—in particular, theories which define in exact terms the psychological mechanisms involved—have been criticized on the ground that they are valid, if at all, only in relation to a particular culture and family structure, and cannot, without considerable modification, be used to

[2] *Le pH en Biologie*. Par Marcel Verain et Jean Chaumette. Préface du Professeur E. Darmois. Paris: Masson et Cie. 1928. (5¼ × 7¼, pp. viii + 160; 20 figures. 16 fr.)

interpret the behaviour of persons living in another cultural environment involving an entirely different system of family relationships. *Totem and Taboo* by Freud, *Dream and Myth* by Karl Abraham, and a number of studies in *Essays in Applied Psycho-Analysis* by Ernest Jones, represent attempts on the part of psycho-analysts to meet this criticism and to relate psycho-analytic theory to that portion of the world's population which does not inhabit Vienna, Budapest, New York, and London. That the anthropologists, too, have gained something by a study of the psycho-analytic method is evident from much of their recent work—above all, from the work of Professor BRONISLAW MALINOWSKI. Professor Malinowski, it may be said, has visited the well of psycho-analysis, but has drunk with restraint and discrimination. His *Sex and Repression in Savage Society* owes much to the work of Freud and his disciples; it represents, however, as cogent and intelligent a criticism of that work as has ever been made. In his latest book, *The Sexual Life of Savages in North-Western Melanesia*,[3] he does not concern himself so strictly with theory; he is content rather to provide material for the theorist in the form of a vivid and detailed account of custom, thought, and ritual, especially in relation to sexual play, courtship, marriage, and family life among the Trobriand islanders, one of the Melanesian peoples of British New Guinea. The interdependence of sexual, matrimonial, and family relationships can be adequately understood only by a study of their variations under different cultural conditions.

Professor Malinowski's book falls roughly into two parts: the first records the life-history of the average Trobriand islander, and includes what must be the most precise and unemotional account of the manifestations of infantile sexuality that has appeared in the English language. It is interesting to learn that pre-nuptial licence, which appears to be general in Melanesia, leads inevitably to the development of monogamous interest and finally to marriage. The early love affairs represent a form of courtship, a process of trial and error, in which promiscuous unions gradually become restricted and give place to permanent, legally sanctioned marriage. According to Professor Malinowski, pre-nuptial licence among the Trobriand islanders leads only very rarely to the production of illegitimate children, and women relatively prolific after marriage remain sterile throughout the period of adolescent liaison. Beyond stating categorically that the natives use no form of contraception Professor Malinowski makes no attempt to account for this extraordinary phenomenon, holding that it demands skilled medical investigation. He insists throughout, though not very convincingly, that the Trobriand islanders have so far failed to associate reproduction directly with the sexual process. In the second part of the book Professor Malinowski makes a detailed study of erotic folklore, games, stories, and songs, and considers at some length the psycho-analytic correlation between myth, day-dreams, and other forms of wish-fulfilment fantasy, and the structure of the family in a matrilineal society. It remains only to add that the book is beautifully written, and one is continually reminded of the fact that Bronislaw Malinowski is a countryman of Joseph Conrad.

CARDIOLOGY.

A CONSIDERABLE number of alterations and additions have been made in the second edition of Dr. REID'S book, *The Heart in Modern Practice*,[4] though the general character of the first edition, which was noticed in our columns on November 17th, 1923, has been retained. Perhaps the best part of the book is the arrangement of the subject-matter, which is presented in five sections. The first deals shortly with anatomical and physiological considerations and methods of examination, and contains a classification of heart disease on the lines of that recently published by the American Heart Association. The three succeeding sections consider heart disease from the etiologic, structural, and functional points of view, while the fifth section deals with treatment; to this are added appendixes giving diets and occupations suitable for cardiac patients, and a series of illustrative case reports.

The aim of the author is to present the best of the new knowledge with that less recently acquired, and there are many references to modern work throughout the text. The book, however, is patchy, and the amount of space devoted to some subjects is hardly in keeping with their importance. Thus, for example, coronary infarction is dismissed in little more than one page, while extra-systoles receive no less than twenty-two pages.

Again, the important subject of failure with congestion is given scant treatment, and neither failure nor venous congestion appears in the index. Though it is true—as the author points out in his preface, foreseeing such criticism—that certain subjects do lend themselves to a brief presentation, while with others clearness demands greater space, yet in a manual for students and physicians the brief statement of important signs and symptoms is too often inadequate to make the reader realize their significance. We feel that though the author has a good story to tell, he does not make his points sufficiently clear.

AMERICAN MEDICAL WAR HISTORY.

THE fourth volume of the history of the Medical Department of the United States Army in the world war has been prepared by Major ALBERT S. BOWEN, under the title of *Activities Concerning Mobilization Camps and Ports of Embarkation*.[5] Other volumes of the series embody data bearing closely on this subject, but not covering it completely. The student of military medicine is bound to be interested in a work that describes and discusses the method by which a large army was mobilized and its raw material trained. It is being realized more and more that if the personnel of an army is to withstand the strains of modern warfare the medical profession must play an important part in its mobilization and training, in the selection of fit men for the more arduous duties, and the placing of unfit men in positions where they may be of maximum benefit to the force. Only in this way, moreover, can the admissions to hospital, invalidism, and pensions be kept down to the minimum.

The volume under review deals with two classes of camps—divisional and miscellaneous—which were used for the mobilization of the fighting forces. The divisional camps comprised the tent group for the National Guard divisions, and the cantonment group for the National Army divisions; the miscellaneous group comprised the special camps intended for embarkation purposes or for mobilizing and training special troops. In describing the procedure during the mobilization and training period (August 25th, 1917, to November 11th, 1918) it is pointed out that the general officer commanding each of the sixteen National Army cantonments was required not only to organize his division, but, for the ultimate purpose of receiving and training men for the tactical divisions, to establish a depot brigade, which from the point of view of the medical department became an important part of camp organization. There follows a detailed account of the medical administrative officer's duties, which are grouped thus: (*a*) prevention of the introduction and spread of communicable disease in the cantonment area; (*b*) administration of prophylactic inoculations; (*c*) sanitation of the cantonment area; (*d*) physical examination of drafted men; (*e*) organization and equipment of sanitation units; and (*f*) instruction and training of medical department personnel. It has been a commonplace of military history that whenever a large force has been specially raised any personnel not required for the combatant units has been considered good enough for the medical services. This same error of organization occurred in the American army, and it was only after the lapse of time that commanding officers came to realize that the care of the sick and wounded was too important and

[3] *The Sexual Life of Savages in North-Western Melanesia.* By Bronislaw Malinowski, Ph.D., D.Sc. With a preface by Havelock Ellis. London: G. Routledge and Sons, Ltd. 1929. (6 × 10¼, pp. xxiv + 506; 96 illustrations. 42s. net.)

[4] *The Heart in Modern Practice.* By William Duncan Reid, A.B., M.D. Second edition, revised and enlarged. London: J. B. Lippincott Company. 1928. (Med. 8vo, pp. xii + 466; 81 illustrations. 25s. net.)

[5] *The Medical Department of the United States Army in the World War.* Prepared under the direction of Major-General M. W. Ireland. Vol. iv: *Activities Concerning Mobilization Camps and Ports of Embarkation.* By Major Albert S. Bowen, *M.C.* Washington: U.S. Government Printing Office. (Sup. roy. 8vo, pp. vii + 491. 1.75 dollars.)

too arduous a task to be delegated haphazard to whatever personnel remained when the combatant units had made their selection.

Four chapters of the book are devoted to a detailed description of the arrangements peculiar to National Army cantonments, and to National Guard camps, while the concluding two chapters, based on the *History of the Office of the Surgeon, Port of Embarkation, Hoboken, N.J., and Newport News, Va.*, give a broad survey of the intricate administrative measures required during embarkation and disembarkation of troops. The mass of facts presented in these chapters is likely to prove uninteresting to the non-specialist student, who will find it difficult to extract from them any broad principles; but the placing on record for all time of the intimate details of the work done in the various camps must command our respect. The officers responsible for the medical organizations in the late war will, in the nature of things, give place to others; and while it is earnestly hoped that the next generation will be spared the horror of war, the record under review will, if the occasion ever arises, prove of inestimable value in helping the medical officer of the future to avoid a repetition of past failures and to build up on the accumulated experience of the past.

NOTES ON BOOKS.

THE sixth edition of Sir EDWARD HENRY'S *Classification and Uses of Finger Prints*,[6] which originally appeared in 1900 at the request of the Indian Government, and subsequent editions at the instance of the Secretary of State for the Home Department, gives an account of the development of this now familiar method of identification. As long ago as 1823 Purkinje, in his inaugural dissertation at Breslau, advocated its introduction, giving nine standard types and suggesting a system of classification. Later Sir William Herschel of the Indian Civil Service, impressed by the amount of false personation in the courts, attempted, but without success, to get their means of fixing identity adopted. In 1894 Sir Francis Galton's further elaboration of the system was considered by a special committee appointed by the Home Secretary, Mr. Asquith. In 1897 the method of classification of finger marks, constructed by the Inspector-General of Police, Lower Provinces, Mr. (later Sir) E. R. Henry, was recommended by a committee as superior to Bertillon's more complicated anthropometric system (1883), and was officially adopted before 1899 in India; in 1901 the identification by finger prints, without the combined primary classification by Bertillonage, as recommended in 1894, was adopted in this country. In this work the method of taking and the necessarily elaborate system of classifying finger prints are clearly set out, and very copiously illustrated by more than 200 diagrams.

The April number of the *Guy's Hospital Reports*,[7] which contains ten articles, opens with a pleasantly written essay, the outcome of Professor G. W. Nicholson's thoughts and reading for thirty years, on the philosophy of natural science. This is followed by a valuable and well-illustrated article on the etiology and significance of extra-systoles, based on analysis of 500 consecutive cases at the cardiographic department, by Dr. Maurice Campbell; they were recorded in about one-fifth of the patients, and were supraventricular only in 30 per cent., ventricular only in 40 per cent., both in 10 per cent., and in 20 per cent. interrupted auricular fibrillation. The editor's name appears over two conjoint papers: with Dr. J. F. Venables of the New Lodge Clinic he shows that, like the duodenal ulcer diathesis, the gastric ulcer diathesis is characterized by the presence of hyperchlorhydria. In reporting two cases of gastric ulcer associated with congenital diaphragmatic hernia, he first points out that there are only two such cases on record—one by Bright in the first volume of these *Reports*, and the other by Key of Stockholm in 1924. Mr. Philip Turner contributes two papers; he describes two cases of multiple rapidly growing soft fibro-adenomata of the breast in girls aged 14 and 15 years, and for comparison one of true hypertrophy of both mammae in a woman aged 25 years. Together with Mr. Nils Eckhoff, the surgical registrar, he gives the results of treating inguinal hernia by simple excision of the sac. There are three articles, replete with analyses of cases, by Mr. Ralph Thompson, from the genito-urinary department, dealing with horseshoe kidney, solitary kidney, and the formation of calculi in the kidney and ureter. A case of total cystectomy in which some investigations on urinary secretion were made is described by Mr. H. L. Maister, Mr. W. H. Ogilvie, and Professor M. S. Pembrey.

One of the great advances in the prophylaxis of malaria has been the recognition that the problem is a local one. It is impossible to formulate any general principles which are applicable everywhere; instead local conditions must be studied on the spot. To this end the Institute for Medical Research inaugurated a series of mosquito surveys in South Africa. The results of the first survey (Part I) received a notice in this *Journal* on June 2nd last year (p. 949). Part II, *A Mosquito Survey of Certain Parts of South Africa, with Special Reference to the Carriers of Malaria and their Control*,[8] by ALEXANDER INGRAM and BOTHA DE MEILLON, which has now appeared, deals for the most part with the low veld district of the Eastern Transvaal, one of the most malarious regions in the Union of South Africa, during September–November, and secondly, with observations made during a tour through the Eastern and Northern Transvaal during the malarial season. Those interested in the epidemiology of malaria will do well to consult this paper.

The official directory for 1929 of the Association of British Chemical Manufacturers, entitled *British Chemicals: Their Manufacturers and Uses*,[9] contains, in addition to particulars of the 120 firms who compose the association, a classified list of British chemicals, with a note on their uses and applications. The names of these chemicals are furnished in five languages in addition to English—namely, French, German, Spanish, Italian, and Portuguese—the idea being that the volume may be of use to commercial attachés, consular officers, and trade commissioners throughout the world, and so widen the British chemical market. Another useful section gives proprietary and trade designations, with a chemical description of the products and the name of the manufacturer. Medicine figures as the sole or as one of the principal uses of a very great number of the preparations. Among the acids alone some forty are given a medical use, and nearly as many of the sodium compounds. The volume is a directory and also a technological dictionary, as well as an impressive index to post-war enterprise in this important field.

The second edition of the book containing tables of doses for roentgentherapy,[10] by Professor Dr. F. VOLTZ, differs from the first in three respects: the text has been extended, the diagrams illustrating the text altered, and the dosage tables, which are the essential feature, have been considerably expanded. The tables should be very useful to those who use *x* rays for therapeutic purposes, as a reference to them saves the trouble of working out depth doses. The letterpress deals with general rules—this covers dispersion, absorption, and scattering of *x* rays—with various points, physical, biological, and so on, affecting dosage, and with methods of measurement.

[6] *Classification and Uses of Finger Prints.* By Sir E. R. Henry, Bt., G.C.V.O., K.C.B., C.S.I. Sixth edition. London: H.M. Stationery Office. 1928. (Demy 8vo, pp. vi + 142; illustrated. 3s. net.)

[7] *Guy's Hospital Reports*, Vol. 79 (Vol. 9, Fourth Series), No. 2, April, 1929. Edited by Arthur F. Hurst, M.D. London: The *Lancet* Limited. (Med. 8vo, pp. 127-252; 38 figures. Annual subscription for four numbers, £2 2s.; single numbers, 12s. 6d.)

[8] *A Mosquito Survey of Certain Parts of South Africa, with Special Reference to the Carriers of Malaria and their Control* (Part II). By Alexander Ingram, M.D.Ed., and Botha de Meillon, M.Sc., Witwatersrand. Johannesburg: Publications of the South African Institute for Medical Research, No. xxiii. 1929. (Cr. 4to, pp. 83-170; 25 figures.)

[9] *British Chemicals: Their Manufacturers and Uses.* Being the Official Directory of the Association of British Chemical Manufacturers for 1929. London: E. Benn, Ltd. 1929. (Sup. roy. 8vo, pp. 298. 10s. 6d. net.)

[10] *Dosierungstafeln für die Röntgentherapie.* Von Professor Dr. Friedrich Voltz. Zweite, vermehrte und verbesserte Auflage. München: J. F. Lehmann. 1928. (Post 8vo, pp. 145; 21 figures. M.5.)

PREPARATIONS AND APPLIANCES.

AN X-RAY PLANT FOR SHIP SURGEONS.

WE have received from Messrs. Philips Lamps Limited the following particulars of a portable *x*-ray outfit, known as Philips "Metalix-Portable," which they claim is suitable for use at sea. A trolley table carries the entire outfit, and accommodates a small rotary converter, which supplies the necessary alternating current to the apparatus from the ship's electric supply. The outfit is provided with a metal-clad *x*-ray tube mounted on adjustable legs, by which means it can be accurately centred over the patient, the high-tension current being fed through two specially insulated shockproof cables. While in operation the outfit can be handled with perfect safety. The patient experiences no sensation, and nothing to indicate that a pressure of some 65,000 volts is being generated within such a small compass. The apparatus is completely enclosed, and no special knowledge is required to operate it.

AN IODINE "PEN."

We have received from Messrs. Clay and Abraham, Ltd. (87, Bold Street, Liverpool), a specimen of their Canda iodine pen. This handy little appliance, as its name implies, is a tubular receptacle for tincture of iodine. The mouth of the glass phial is drawn out into a point so that the iodine can be applied drop by drop without the need of a brush. A screw top with washer prevents leakage, and further security is given by a metal container. The price complete is 1s. 2d., post free.

TREATMENT OF MALIGNANT DISEASE BY RADIUM.

CAVENDISH LECTURE BY PROFESSOR CLAUDE REGAUD.

THE Cavendish Lecture, under the auspices of the West London Medico-Chirurgical Society, was delivered at Kensington Town Hall on June 21st by Professor CLAUDE REGAUD, director of the physiological laboratory of the Radium Institute, Paris. The title was "The progress and limitation in the cure of malignant diseases by radium." Professor Regaud exhibited many tables of statistics of cases treated at the institute, which were not, however, very easy to follow, and he spoke of "complete cures" when it was not quite clear what criterion of cure had been adopted. In one part of his lecture he referred to a five-year freedom from recurrence as though this were equivalent to cure, and yet apparently cases which had been treated as recently as 1926 were recorded as cures.

Methods of Radium Application.

Professor Regaud began by remarking that the chief advances in radium therapy (or as he preferred to call it "curietherapy") had resulted from an increased knowledge in two directions: the physical properties of radio-active substances, and radio-physiology in general; in particular, the behaviour of cancer treated by radiation. Various methods of attacking cancer by radium had been followed these last thirty years. One method might be dismissed at once as having no proved value—namely, indirect approach by way of the blood stream. The three main procedures had been internal, interstitial, and external curietherapy. The first consisted in the introduction of radium tubes into the natural cavities or channels. In general this had not been very successful except in the treatment of squamous-celled cancers of the uterus. Here Professor Regaud gave statistics of uterine cancer treated in this manner at the Radium Institute in Paris, and claimed for it a high percentage of cures. The second method was what he called radium puncture—namely, the introduction of radio-active needles into the substance of the tissues. Radium puncture had been perfected at the Paris Radium Institute, where treatment by numerous foci of weak intensity was made a regular method. It was reserved, however, for certain cancers of small size, cutaneous or subcutaneous, such as certain varieties of cancer of the breast, and especially cancer of the tongue. In this limited field the procedure gave good results, despite the difficulty of ensuring a uniform irradiation and the possibility of radium necrosis which sometimes complicated the treatment. His institute was by no means wedded in principle to this procedure. Maxillary cancers had been treated by resection of the superior maxilla followed by packing the cavity with numerous small radio-active foci. The use of radium combined with surgery offered a promising field, and in cancer of the rectum the employment of surgical radium puncture and excision seemed to give better results than excision alone. Of cancers of the tongue and floor of the mouth treated at the Radium Institute between 1920 and 1926, a complete clearing up was reported in 82 out of 367, while 193 had to rank as complete failures. The method adopted was again that of numerous weak radio-active foci, the tubes being retained in position by gauze packing. The lecturer also described a method of applying radium externally by embedding the tubes in plastic supports of any desired shape or dimensions. This method had resulted in great progress in treatment of cancers of the skin, lymphatic glands, and mouth, other than the tongue. Statistics for cancer of the lips treated in this way between 1920 and 1926 showed that in 62 operable cases a complete cure was effected by radium in 56; out of 22 cases of doubtful operability there were 16 complete cures, and out of 28 inoperable cases, 4 cures.

Telecurietherapy.

When the depth of the cancer necessitated a screen distance greater than 6 to 8 cm., the dose of radium required, instead of a few hundred milligrams, was of the order of grams. It was then necessary to surround the radiating surface with lead several inches thick in order to protect the body of the patient and others. These considerations during the past six years had led to the construction of a source of gamma radiation acting at a distance, in the same way as the x-ray tube. Telecurietherapy, or irradiation of the tumour at some distance from the body, required the use of radium in bulk, and its use must always be limited by the scarcity and high price of the element. It had been employed in the treatment of deeply seated cancers. In actual procedure up to the present, not more than 4 or 5 grams of radium had been used, and with this a screen distance of 10 to 12 cm. could scarcely be exceeded; with greater distances the time occupied in treatment would be too long. If only radium were more plentiful it would be possible to develop this method, and the relative values of roentgenotherapy and curietherapy in the treatment of malignant disease would be greatly altered and the value of the latter enhanced. Professor Regaud illustrated by diagrams how a radium source of the strength indicated was enclosed in a lead box with walls 6 cm. thick, suspended from a supported beam, and placed in position over the patient for the treatment of cancer of the uterus.

Radio-physiological Investigation.

In spite of the fact that it had been again contended recently that radiation acted on cancerous tissue indirectly, the direct effect of the rays on the cells appeared to him to be established beyond serious criticism. The central problem of radiotherapy consisted in destroying the cancer cells through the whole extent of the infected area. There were two methods which could be employed. One was to give such a dose of radiation that all the living cells in the treated region were destroyed; the other—much more interesting and important—was to take advantage of the differences of the cells in respect to radio-sensitiveness and to cure the cancer by a cell dissection. This procedure, which had received the name of selective radiotherapy, depended upon a greater radio-sensitiveness of the neoplastic than of the normal cells. The difference should be sufficiently great to permit the toleration of those inequalities which were by reasons of geometry unavoidable in the irradiated area. Cancers differed widely in their degree of radio-sensitiveness; lymphosarcoma, for example, provided its dimensions were limited, could nearly always be sterilized, whatever its situation, because of its radio-sensitiveness, though the cure was unfortunately only local. Radiotherapeutic methods owed their utter powerlessness in certain cases not so much to the absolute radio-resistance of the neoplasm as to the great radio-sensitiveness of the surrounding tissues. Time did not permit the lecturer to deal with the reasons for the difference in radio-sensitiveness, but he indicated how the two factors, intensity of radiation and time of application, could be altered so as to get nearer to the desired effect. By using weaker doses spread over a longer time effects could be obtained which varied greatly from those forthcoming with strong doses given for a more limited time. Touching upon the association with radium therapy of the Blair Bell method of chemotherapy, the lecturer said that it was premature to draw conclusions from this research, but it was not impossible that it would produce important practical results, and once again experiment might set aside the limits apparently imposed upon the radiologist by Nature herself.

General Conclusions.

Summing up his general conclusions, Professor Regaud said that among the various procedures for applying radium the method of radium puncture should survive, though in a limited field. Radium combined with surgery still offered promise for further research. The employment of radium by placing it in the natural cavities appeared to have reached the limits of its usefulness, except in the uterus. Substances of plastic material were of value in the treatment of cancers of the skin and in some subcutaneous tumours. Telecurietherapy was encouraging in the treatment of deep-seated cancers, but was limited

by the scarcity of radium. On the radio-physiological side it remained to make the most fruitful investigations, and if means could be found to increase the narrow margin of radio-sensitiveness which lay between normal and cancerous tissues it would constitute a momentous discovery. A judicious exploration of the time factor had enabled the treatment of squamous-celled cancer to be greatly facilitated. By persevering in this line of research fresh progress would be made. Nevertheless, the fact could not be disguised that there was one obstacle which would always lie in the path of local radiotherapeutic methods—namely, the lack in certain cancerous cells of sensitiveness to radium, leading to widespread local extension and dissemination of the disease. The treatment of cancer by *x* rays and gamma rays had made great progress. Nevertheless, the method was limited. Radium was not a panacea for cancer—far from it. The public, and even medical men, did not always realize the serious difficulties which were encountered in its use. Therefore, while awaiting further developments in the radium treatment of cancer, the first reliance must be upon early diagnosis and prompt treatment.

MEDICAL CLUBS AND SOCIETIES.

MACALISTER LECTURE BY SIR HUMPHRY ROLLESTON.

To a gathering at the London Temperance Hospital, under the auspices of the London Clinical Society, on June 20th, Sir HUMPHRY ROLLESTON, Bart., G.C.V.O., delivered the third annual lecture in memory of Sir John MacAlister, the secretary of the Royal Society of Medicine. The subject of the lecture was "Medical friendships, clubs, and societies."

Sir Humphry Rolleston began by mentioning four men—three of them medical men, and the fourth J. Y. W. MacAlister—who, differing widely in their circumstances, illustrated some points in common, especially a manifest love for their fellow-men, the association of this charity with a like affection for books, and an appreciation of the value of clubs, societies, and libraries for professional life and progress. The first was Conrad Gesner, of the sixteenth century, who "kept open house for all learned men who came into his neighbourhood"; the second was Sir Thomas Browne, the author of *Religio Medici*, a book-lover and a philosopher, with a wide circle of friends and acquaintances; and the third was Sir William Osler, scholar-physician, teacher, humanist, a man thoughtless of self, and in sympathy with young and old, with the faculty of rapidly forming friends and of keeping them. As for MacAlister, a very clubbable man, the lecturer briefly sketched his career, and his great work for the Royal Society of Medicine and for the improvement of libraries.

Medical Clubs.

The lecturer went on to speak of the various medical clubs in London, some of them of a private, almost a family character. At the Royal College of Surgeons there was a Council club, and the Royal College of Physicians had a Fellows' club. The United Hospitals Club kept green the former close proximity and association of Guy's and St. Thomas's. Edinburgh also was rich in medical clubs of a convivial character. Sir Robert Philip had told him about the Harveian Society of Edinburgh, also called the Circulation Club, founded in 1782, with twenty members. The founder was Andrew Duncan, sen., and the threefold intention was to commemorate the discovery of the circulation, to promote good fellowship, and to foster experimental research. Another Edinburgh club, the Aesculapian, originally a supper and subsequently a dining club, was founded in 1773. It met quarterly, and was composed of 22 members chosen from among the Fellows of the Royal Colleges of Physicians and Surgeons of Edinburgh. A remarkable feature of this club was the devotion of the secretaries, for between 1773 and 1888 it had but five, an average tenure of twenty-three years. A more recent club, but now extinct, in Edinburgh was the Round Table, which flourished from 1868 to 1895. In Dublin, again, there were many clubs. The Medico-Philosophical Society, founded in 1756, was occupied at first with learned papers, but later it underwent a change, and the character of its meetings became entirely festive. In May, 1831, it was extinguished, to be revived in 1856 under its original name, as a dining club, sometimes jocularly dubbed the "Philo-oesophageals," the business being confined to the reading of the minutes of the previous meeting, which merely recorded the locality of the dining room and the names of the banqueters. The membership was limited to twelve.

Certain clubs developed into medical societies with a formal constitution. The lecturer mentioned the Leeds Medical Club, founded in 1862 by Clifford Allbutt and others. This club met until December, 1872, when it adjourned *sine die* in favour of the Leeds and West Riding Medico-Chirurgical Society, which flourished to this day. A body which represented the transition between a club and a society was the Association of Physicians of Great Britain and Ireland, started in 1907, largely under Osler's influence. It was composed of 250 members actively engaged in the teaching of medicine or in research, and met for two days once a year in university towns or towns the seat of recognized medical schools.

Medical Societies.

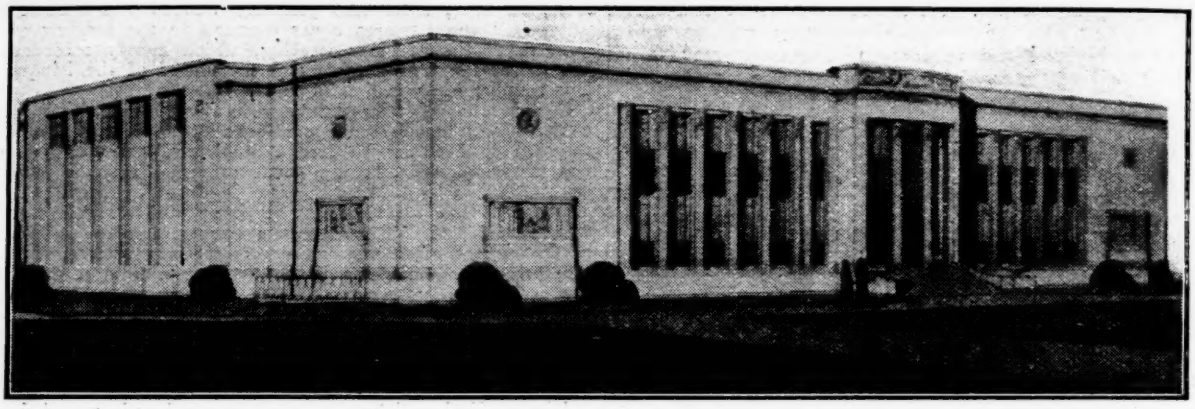
The medical society, the lecturer continued, supplied some of the essentials of post-graduate education; it offered also a legitimate means of intra-professional advertisement, and enabled young men to make themselves known to their older and better-established, but not necessarily better-equipped, brethren. The germ of the medical society in this country might be regarded as the meetings, beginning about 1649 in Oxford, of the "Philosophicall Clubbe." Many of the members, but by no means all, were physicians, and their object was the study of science in which medicine was to a certain extent included. The earliest medical societies proper were simply committees which published medical papers. After mentioning the early history of medical societies in Scotland, the lecturer sketched the growth during the second half of the eighteenth century of quite a number of medical societies in London and the provinces. John Hunter, with George Fordyce, founded the Society for the Improvement of Medical and Chirurgical Knowledge. More than one of these early societies bore much the same name as the present Medical Society of London, which was founded in 1773, and in consequence confusion might easily occur. The Medical Society of London was at first limited to 30 physicians, 30 surgeons, and 30 apothecaries, as the general practitioners were then called. The Medical and Chirurgical Society split off from this body in 1805, and rather more than a century later became the Royal Society of Medicine.

In the formation of provincial medical societies in the latter part of the eighteenth century the example appeared to have been set by Warrington; others followed at Colchester, Plymouth, Leicester, Halifax, St. Helens, and Nottingham. All these were formed between 1774 and 1828. The Gloucestershire Medical Society, which was spoken of as the Fleece Medical Society, from the name of the inn in which it met, was favoured by Edward Jenner in 1789 with "remarks on a disease of the heart following acute rheumatism, illustrated by dissections"—perhaps the earliest occasion, or one of the earliest, on which rheumatic heart disease was recognized. The lecturer also glanced at students' medical societies, in London, Edinburgh, and Glasgow. America was rich in this product; at Harvard there were more than a dozen such medical students' clubs, which were named frequently by letters from the Greek alphabet.

Libraries.

Sir Humphry Rolleston concluded with a few words about libraries. Like clubs, he said, libraries provided welcome meeting-places for making new acquaintances along many lines of thought and cementing old attachments. There the living could gain an intellectual and intimate affection for the heroes of the past. "To spend hours in a library excites feelings of pity, sadness, and humility, for there are many and bulky tomes on which their authors expended their energies in the hope of attaining fame, and yet too often without any success—a sobering warning to modern aspirants for literary honours, that success in gaining immortal fame is unlikely to be attained without hard honest work and ability." The book-lover knew well the advantages of his friends, the dead authors to whom he could turn for counsel and comfort at any time of day or night. Librarians who thus introduced the present to the past should be the friends not only of those whose messages were under their official guardianship, but of those who came to listen and to learn. And so he ended with a reference again to MacAlister, the model librarian, who sacrificed his own ambitions to satisfy those of others in study and publication.

A warm vote of thanks was accorded to Sir Humphry Rolleston on the motion of Major RICHARD RIGG, the chairman of the hospital, seconded by Mr. ERNEST CLARKE, and supported from the chair by Mr. HERBERT J. PATERSON, the president of the society.



AUSTRALIAN INSTITUTE OF ANATOMY.

By a unanimous vote the Federal Parliament of Australia recently authorized the immediate construction, according to revised plans, of an Institute of Anatomy at Canberra, at a cost of approximately £100,000. The Institute will have as its first director Sir W. Colin Mackenzie, M.D., F.R.C.S., whose unique collection of specimens of the native fauna will serve as the basis of a wider collection which is intended to embrace every aspect of anatomy. On his return to Australia after the war he resolved to devote his life and resources to the study and preservation of the "living fossils" of his native land—platypus, echidna, and the many forms of marsupials—all of which were threatened with speedy extinction. Some of our readers will recall[1] that when it was determined to centralize the Commonwealth Government at Canberra a scheme was sanctioned for the erection of a national museum of Australian zoology in the new capital, and that Professor Colin Mackenzie was called upon to organize and direct this great undertaking, which is henceforth to be known as the Australian Institute of Anatomy.

[1] *British Medical Journal*, September 22nd, 1928, p. 539.

The architectural drawing reproduced herewith shows the new Institute as it will appear when completed. The height of the building will be 36 feet, and it will have a frontage of 183 feet, and a depth of 134 feet. It will comprise a block devoted to administration and research, and a museum. The administrative block will consist of a basement; a ground floor, containing the entrance hall, an anthropology room, a department of histology, the director's and secretary's offices, waiting rooms, research rooms, a library, and a lecture theatre seating 200: and a first floor, which will be occupied by a dissection room, a department of osteology, six research rooms, and a room for still and cinematographic projection. The museum block will be made up of two units, each 87 feet by 52 feet, and containing a basement for storage, a ground floor for the exhibition of specimens, and a gallery. The building will be completed in April, 1930.

Besides this provision, an area of 80 acres has been reserved on the River Molonglo, in connexion with the Institute, where it will be possible to study the Australian fauna in their natural state.

Nova et Vetera.

GILBERT MAMINOT, THE CONQUEROR'S PHYSICIAN.

Our knowledge of Gilbert Maminot, Bishop of Lisieux and physician to William the Conqueror, rests principally upon the account of him given by Ordericus Vitalis, in his *Ecclesiastical History of England and Normandy*. Ordericus was a contemporary, and would appear to have known him well. This is what he has to say about him:

"Gislebert, surnamed Maminot, the king's physician and chaplain, was chosen bishop of Lisieux, and consecrated by Michael, bishop of Avranches, in the presence of the lord archbishop John, who, as we have said, had lost the use of his speech. He was a son of Robert de Courbépine, a brave knight; and, filling the see twenty-three years, managed ecclesiastical matters with a strong hand. Though deeply skilled in the art of medicine, after he became bishop he was unable to cure himself. He was eminent for his learning and eloquence, abounded in wealth and the luxuries it procured, but was a slave to his own gratification and the care of the flesh. Ease and leisure were his great objects, and he indulged frequently in dice and other games of hazard. Negligent and slothful in his ecclesiastical duties, he was ready and active enough in hunting and hawking. He therefore devoted his life to worldly exercises and employments, and did not give them up till age compelled him. I could write more about him, but I check my pen, because it was by him that I was admitted to the order of subdeacon, with (as well as I can recollect) three hundred others. But as I have mentioned some things that were not very creditable to him, it is but right that I should record his merits and his doings which are worthy of imitation. He gave alms freely to the poor, and was distinguished for a stately sumptuousness and wise liberality. In his judgements he keenly investigated the truth, and was indefatigable in defending the right, dispensing justice freely to all who came for it. He treated with gentleness offenders who humbly confessed their sins, and judiciously gave wise and salutary counsel to true penitents. He performed the ceremony of conferring sacred orders, and of consecrations, with care and devotion; but he was inert and difficult to be roused to undertake them, nor would he engage in these offices until he was compelled by the united entreaties of numbers. . . . He maintained those appointed to office in the church at Lisieux by bishop Hugh, and gave them instructive lessons in the wide field of arithmetic, astronomy, physics, and other profound sciences, receiving them as his guests, and familiarly conversing with them at his entertainments."

Gilbert was tall and spare; he was addicted to watching the stars, and drew the usual supernatural inferences from anything unusual which he happened to observe.

In the year 1089 Gilbert's disputes with the monks of St. Evroult culminated; he had refused to give his benediction to their abbot unless the latter signed a profession of canonical obedience. This controversy had been going on for ten years, and was finally settled by Gilbert giving way, under royal pressure, in the year above named. Gilbert Maminot died at an advanced age in August, 1101.

Of his patients the only one of whom we have much knowledge is his master, the Conqueror. Gilbert was in attendance during the four weeks which elapsed between William's abdominal injury and his death in 1087. This responsibility he shared with Guntard, abbot of Jumièges. He was present, in his ecclesiastical capacity, at William's funeral at Caen.

Gilbert was made bishop of Lisieux in 1077; he assisted at the Council of Rouen in 1096.

It is unlikely that Gilbert Maminot was much in England at any time, but he was a tenant *in capite* of an estate of twelve hides in Gloucestershire; he had here as subtenant one Hugo Maminot, obviously a relation. It should be noted that this estate was his personal property apart from his position as Bishop of Lisieux. The bishopric owned land in Wilts, Dorset, Hertfordshire, Bucks, and Oxfordshire, as well as two *mansiones* in York. R. R. J.

British Medical Journal.

SATURDAY, JUNE 29TH, 1929.

A NATIONAL MATERNITY SERVICE.

IN an article in our isue of April 13th last (p. 691) Dr. Farquhar Murray well says that "the problems of maternity provide the greatest possible scope for organized preventive medicine. By means of an adequate maternity service many of the deaths and much invalidism resulting from childbirth could be avoided." The problems indicated have been under consideration and discussion by the medical profession and others for a considerable number of years, and there is now a decided feeling among the profession and the public that early and practical steps should be taken to deal with them on a national basis.

The British Medical Association has taken a large part in the effective consideration of these matters, though its activities have perhaps received an insufficiently wide recognition. During the past five years, to go no further back, a considerable part of the time of the Council and of the Representative Body has been occupied with the problems of maternity. In addition to the ordinary work of the Maternity and Child Welfare Standing Subcommittee, two special committees have dealt with special aspects of the subject. An influential and representative conference was called in January, 1928. Evidence containing definite proposals for the lines of action was given before the Royal Commission on National Health Insurance, and, more recently, before the Departmental Committee on the Training and Employment of Midwives. In the columns of the *Journal*, besides the reports of the committees or conferences and the memorandums of evidence above referred to, there have appeared a large number of articles and letters offering important and suggestive contributions to the discussion. Finally, in this week's *Supplement*, in the Supplementary Report of Council (p. 258), will be found the details of a scheme which is recommended to the Representative Body "as a contribution, on lines acceptable to the profession, towards the establishment of a national maternity service."

It is of some importance to note that during the earlier years of the discussion from which this practical scheme has emerged there was definite diversity of opinion within the profession as to the lines on which a solution was to be sought. One school of thought, probably never having any large number of adherents, but marked by the definite pronouncements of a few very influential persons among these adherents, maintained that safety lay mainly in the direction of a large increase in the institutional provision for both normal and abnormal confinements, and for the setting up, under the auspices of local health authorities, of an extensive service of specialist obstetricians, general practitioners being either wholly excluded from this work or admitted to it only after strict tests of skill and reliability applied by some competent authority, and on an obligation officially to furnish a detailed report of their treatment to some superior officer. It may be useful to refer to a leading article on this aspect of the subject which appeared in the *Journal* of June 12th, 1926 (p. 999); but there have been indications recently that one or two of the advocates of such a system have considerably modified their attitude, and such a solution as that above suggested can now commend itself only to an occasional professor or to a few members of the public health service. The general opinion of the medical profession has developed, more and more strongly, on entirely different lines; and these other lines are also those indicated by the Report of the Royal Commission on National Health Insurance, and by the general body of evidence which has been presented to official or scientific committees of inquiry. It is being recognized with increasing emphasis that ante-natal care and the supervision of childbirth and of the puerperium are the business of the general practitioner, that full and organized co-operation between doctor and midwife is a necessity, and that specialist advice and institutional accommodation must be available for all cases which require them.

It is on these lines that the scheme now put forward by the Council of the Association is constructed. It is avowedly based upon the three principles: "(*a*) that the normal case can be safely treated at home; (*b*) that maternal mortality and morbidity can be very greatly reduced when proper ante-natal care and supervision during confinement is provided in all cases, together with institutional accommodation for cases of complicated labour; (*c*) that maternal morbidity can be greatly reduced with proper post-natal care and treatment." The second of these statements is now accepted almost as a commonplace; the important things to note in connexion with it are that there is great need for the better instruction of the general body of midwives in accurate ante-natal observation, and to some extent of medical practitioners in ante-natal examination, and that, apart from their use as educational centres, and in some areas as convenient places at which practitioners may examine their patients in the presence of the midwife, ante-natal clinics are not necessary to ensure proper ante-natal care. The third of the above statements of principle has been less frequently made but is equally important, as is emphasized by Dr. James Young's article on "The woman damaged by child-bearing" published in the *Journal* of May 18th last (p. 891).

The attention of the profession and of the public should be particularly drawn to the first of the enunciated principles—that the normal maternity case can be safely treated at home. To support this proposition it is not at all necessary to draw any comparisons between statistics relating to institutional and to domiciliary cases; still less to seem to disparage in the slightest degree the excellent work of institutions. It is admitted, however, that the congregation of maternity cases in institutions has certain possible dangers, and that there have been a large number of private practices, conducted over a long series of years and in most unsatisfactory housing conditions, which show a surprisingly low maternal mortality. The statistics given in the Council's report of the outdoor practice of maternity hospitals and institutions may fairly be said definitely to establish the proposition laid down. This is of the first importance, for it allows of a national scheme on the basis of home attendance in confinement, and of institutional provision mainly restricted to those abnormal cases which really require it on medical grounds. Such a scheme, providing for everything that is essential, but not setting out to supply all those things which may be called in this connexion luxuries or mere conveniences, yet leaving a margin, as it does, for the adequate training in normal cases of the midwife and the medical student, is certain to receive a careful and sympathetic consideration from all those who are concerned with the problem towards the solution of

which it is offered as a contribution. Its details of organization, statistics, and finance are of very great interest. It is understood that the Ministry of Health is preparing a scheme with a view to legislative and administrative action. The Association's proposals, along with those which will be shortly forthcoming from the Departmental Committee, will certainly be found of service. They at any rate indicate the lines upon which the medical profession would be willing to offer its zealous co-operation for the national good.

THE INDIAN MEDICAL SERVICE.

DURING recent years the medical services of the armed forces have been passing through a period of stress and difficulty, due primarily perhaps to the reaction against such service following on the experience of the great war and the inevitable difficulties of post-war reorganization, but in part also to the rival attractions of the expanding public health services at home and the increased demands of the colonial medical services overseas. In the case of the Indian Medical Service these factors have been reinforced, not only by the difficulties and uncertainties common to all Indian services in existing political conditions, but by long-drawn-out suspense as to the basis of reorganization of the military medical services in India. Other contributory factors have been the altered status of medicine under the reform scheme as a "transferred" subject administered by Indian provincial ministers, and by the loss to the I.M.S. of a number of minor civil surgeoncies and a few important teaching posts through the formation of a provincial cadre of non-I.M.S. appointments. It is little wonder, then, that during some years recruiting for the I.M.S., more especially of British officers, has been for the most part limited to temporary appointments, when not actually in abeyance.

The publication in 1928 of the reorganization scheme for the medical services in India and the resumption of recruitment for permanent commissions in the I.M.S. did something to improve a position of the utmost gravity. But, apart from the wider issues of the transition period in India, two main sources of dissatisfaction remained which, in the opinion of the Council of the British Medical Association, were in themselves sufficiently important to hinder an adequate supply of European candidates for the Service. The first was that the chief administrative posts under the provincial Governments were omitted in the scheme from the list of appointments reserved for officers of the I.M.S. Secondly, the shortage of recruits so impeded the transfer of officers from military to civil employ as to minimize what has always been recognized as the chief attraction of the Service. As reported in the *Supplement* to our last issue (p. 241), the chairman of the Naval and Military Committee was able to inform the June meeting of the Council of the British Medical Association that steps have actually been taken to remedy both these defects. Further information will be found in the *Supplement* this week (p. 253).

In the first place it has been ruled that, until all officers in civil employ at the date of publication of the reorganization scheme have retired or been otherwise provided for, the chief civil medical administrative posts under the provincial Governments will be filled by officers of the I.M.S. This means on the one hand that the provincial departments will for some twenty-five years enjoy the services of the most competent officers, both British and Indian, likely to be available during that period, and on the other that the legitimate interests not only of the British members of the Service, but also of the pick of the young Indian practitioners, many of whom have incurred the labour and expense of acquiring British qualifications, will be adequately safeguarded. The proviso does not, of course, directly affect future entrants to the Service; it does, however, remove a doubt as to fair dealing with the existing Service, the significance of which at the present time will be recognized by those who are conversant with Indian conditions. In the second place, the end of the block in the transfer of officers from military to civil employ is now in sight. The resumption of recruiting has already eased the position, and the military authorities, realizing the nature of the impasse, have agreed to reduce their demands by no fewer than fifty British officers. This leaves only twenty-two to be recruited as from the beginning of the current year, and of that number sixteen have already been accepted and are under training, while the remaining vacancies, which have already been advertised in the *British Medical Journal* and elsewhere, will doubtless be filled in the course of the ordinary summer recruiting next month. As soon as these officers have received a year's training in India the flow into the civil branch of the Service will be renewed. Full particulars with regard to the conditions of service, pay, and pensions can now be obtained on application to the India Office, and it is perhaps pertinent to observe that candidates entering the Service at the moment will be in a particularly favourable position as regards prospects of promotion, owing to the preceding period of suspended recruiting.

The Council of the British Medical Association heard with great satisfaction that once again its efforts to secure the removal of obstacles to the efficient working of a service in support of which the Association has always been particularly active had been crowned with success. It has informed the India Office that it is now prepared to assist, as heretofore, in obtaining an adequate supply of recruits. Members of the Indian Medical Service will doubtless feel that the presence at the India Office of so distinguished and experienced an officer as Sir Leonard Rogers has not been without its influence in determining the sympathetic attitude of both the civil and military authorities in this matter.

He would be a bold prophet who should venture at this juncture on a definite forecast of the future of any Indian service, but to the tale of obstacles removed we may fairly add some account of definite advances which we understand have already been achieved. The military branch of the Service is now working in harmony with the Royal Army Medical Corps in well-equipped station hospitals. Thirty well-qualified British officers have entered the Indian Medical Service in the course of the past twelve months. The fact that at present junior officers seldom avail themselves of the right to retire with a gratuity of £1,000 after six years' or of £2,500 after twelve years' service seems to indicate that the financial position is not unsatisfactory. As compared with that of twenty or thirty years ago, indeed, it is definitely satisfactory. India is not exempt from the general post-war rise in both costs and standards of living, but the pay, including the overseas allowance, is at three times the old rate, while the sterling value of the rupee is nearly 50 per cent. above the rate then prevailing. Passages are now available for

officers and their families going on leave, provision is made for study leave, and freedom from moves during the first year's service is guaranteed.

There remains one feature of the position the importance of which for the future of India and the I.M.S. can hardly be exaggerated. The development of the research department, so far from being checked by recent difficulties, has received a definite impetus during the past few months. The scheme described in the *British Medical Journal* for December 1st, 1928 (p. 1001), has been accepted, including a new central research laboratory with twenty acres of ground in the favourite station of Debra Dun and a new public health laboratory opposite the Calcutta School of Tropical Medicine. This last, made possible by the generosity of the Rockefeller Foundation, will also be maintained and staffed by the Government of India. An officer of the I.M.S. has just been appointed as its first head, and members of the Service will be eligible for such posts in the future. If such development continues unchecked (and it must be remembered that research, as a "reserved" and not a "transferred" subject, has some slight protection against the changes and chances of the transition period), the I.M.S. should offer to selected workers, both British and Indian, an entrance to a field of research unrivalled in any part of the Empire.

MEDICAL EDUCATION.

THE problems of medical education are not only many and difficult; they are to a considerable extent contradictory. The demand for a somewhat later beginning and for a simplified and, if possible, shortened curriculum is combined with the suggestion that many parts of the curriculum should receive fuller attention, and that further subjects—some purely professional, others not strictly medical, but having a useful if not essential value in relation to medical practice—should be added thereto. The nature and cost of medical education are, of course, of interest not merely to actual and prospective members of the profession itself, but also to the public in general, for on the efficiency of such education the safety of that public in health matters depends, and on the cost of such education depends in large part the cost to the public of its medical care.

We are reminded of these things by a paper recently read before the Annual Congress on Medical Education, Medical Licensure, and Hospitals, Chicago, by Dr. Ray L. Wilbur.[1] The conditions in this regard in the United States are not quite the same as with us, but similar problems arise and similar principles are applicable. The relative efficiency of medical education in America is of more recent establishment than here. As Dr. Wilbur says: "A generation ago we were well behind the schools of Europe, and the aim of an ambitious student was to round off his training in a foreign clinic." As a reaction from this there is, he thinks, now "some distortion of the whole scheme of medical education," and "there is developing an exuberance in some plans for buildings for medical instruction. In one great city the plan is going forward for the construction of a plant at an approximate cost of 55,000,000 dollars, with the primary aim of undergraduate instruction of medical students. With a striking absence of facilities for post-graduate training it seems absurd to aggregate such large sums of money in metropolitan centres for undergraduate medical instruction. No such sums are actually required to give the training necessary." We can the more readily agree with Dr. Wilbur, inasmuch as we are not likely to be faced in Great Britain with any financial proposals of such magnitude, and believe that we can maintain a satisfactory position without them. Here, as well as there, however, in Dr. Wilbur's words, "It is important that a proper scheme be evolved so that medical education may not put too great a cost on the sick. We do not want cheap education or cheap men; but we do need to demand all the economies that are reasonable and possible during the period of medical training if we are to solve the problem of the distribution of medical service at a reasonable cost to the public." Dr. Wilbur demands not only simplification of plant, but a shortening of the period of medical study, while at the same time he suggests that training in the field of economics and social organization should be added to the course. He does not succeed in showing exactly how this is to be done.

The whole field needs to be surveyed from time to time in its due perspective, and not the less now because the General Medical Council has in some sort made such a survey of existing conditions. The main points to be determined are (1) what it is that we are to expect of the medical student at the time of his qualification; (2) how far we are to rely on preliminary and pre-medical education to enable the required result to be produced, and on post-graduate opportunities for further progress; and (3) how best the intervening undergraduate medical course can be arranged and utilized. On the first point we have previously said in a leading article in this *Journal*:[2] "There is no pretence that a medical student, on passing his qualifying examination, has become a wise practitioner or is specially skilled in any branch of his profession; but his training and knowledge should even then be such that he can safely undertake many kinds of medical and surgical work, that after relatively short further experience he can properly assume considerable responsibility in one or other of the local government medical services, and that he will be in a position fully to profit by increasing experience, whether in such service or in private practice." On the second point we have raised the question whether the time is not now ripe to raise to 18 years the age at which medical education, properly so called, should begin, and as to whether prior to this commencement there should not be required evidence, not merely of a good general education and of some knowledge of physics and chemistry, but of a thorough grounding in these basic sciences, and especially in organic chemistry and in biology, so that throughout the medical curriculum proper it would be only the medical and surgical applications of these sciences that would be taught. On the third point we have emphasized the advantages of the British plan of picking up clinical methods and pathology while in daily contact with patients, rather than that of assuming that the ideal medical man can be rapidly made out of a well-drilled laboratory pupil. There is nevertheless need—and Dr. Wilbur has performed a real service in pointing this out—for reasonable opportunity for the medical student acquiring some knowledge of economic and social sciences, and, we would add, of psychology also. Perhaps such opportunity would be sufficiently provided if undergraduate medical education were pursued always under true university conditions rather than in the narrower atmosphere of an isolated medical school.

[1] *Journal of the American Medical Association*, April 27th, 1929, p. 1410.

[2] June 11th, 1927, p. 1054.

ENCEPHALITIS LETHARGICA IN CHINA.

REFERENCES in the literature to the existence of encephalitis lethargica in the Far East are increasing, and the latest contribution to knowledge of the disease in China is supplied by Dr. Maximilian Pfister, whose article we publish on page 1156 of our present issue. With the special opportunities afforded by his position as neurologist at the Peking Union Medical College the author has been able to study the disease in 100 patients coming under his observation during part (2½ years) of the period 1923-25. Of this series—the largest so far reported from China—more than half the number of patients came from Peking and its neighbourhood, and the remainder from coastal towns in China. As in this country, the disease was most prevalent during the cold season, it affected those of sedentary occupation rather than outdoor workers, and its chief incidence was among those between puberty and middle age; as regards sex incidence, however, it is interesting to note that 80 per cent. of the patients were males. The clinical picture is also said to be similar to that presented by European patients, and in this series of cases, as in many others, Parkinsonism was the commonest form of post-encephalitis. It is noteworthy that Dr. Pfister refers to the occurrence of epidemic outbreaks in the neighbourhood of Peking and in particular to "a small epidemic of benign character," which occurred during 1924, the peak year in this country, when the disease, though unusually prevalent, was comparatively mild in character; during the same winter the author met with abortive forms of the disease. Regarding the presence of encephalitis lethargica in China, Dr. Pfister considers that the disease has been imported from the West along the sea routes from Europe and by way of India to the ports of China; as Dr. Pfister says, this would certainly appear to be the most likely route by which the infection of cosmopolitan diseases would reach China. Dr. Pfister makes the additional suggestion that the infection of encephalitis lethargica was originally brought to China from Europe by Indo-Chinese troops returning from the European war areas. On the other hand, Dr. A. J. Watson of Yunnanfu, in a paper which received notice in our issue of August 18th, 1928, and to which Dr. Pfister now directs critical attention, puts forward the hypothesis that the infection of encephalitis lethargica was taken out of China by those Chinese who took part in the European war and by them disseminated among the combatants of other nations. Dr. Watson's hypothesis rests particularly upon the assumption that one of the 19 patients seen by him during 1928 was correct in referring the onset of his illness to the year 1915 and upon the inference that there may have been other undiscovered cases in China about, or even before, that time. Dr. Watson was impressed by the fact that most of the patients seen by him came from remote country districts which they had not previously left, and where, in normal times, the inhabitants have little intercourse outside their own villages; in this comparatively isolated province of Yunnan encephalitis lethargica is considered, indeed, by Dr. Watson to be an endemic disease. Dr. H. P. Yew has more recently[1] expressed a similar belief, based upon an experience of thirty odd cases seen over a period of two years in Yunnan Province. Dr. Pfister, however, questions the reliability of the case-history given by this particular patient of Dr. Watson, despite the belief of both Dr. Watson and Dr. Yew that the evidence was trustworthy. He also assails the argument used by Dr. Watson in support of his notion that the disease may have originated in Yunnan Province. The fact, adduced by Dr. Pfister, that troops from Annam were engaged at Verdun and returned from that front in 1915 rather supports the supposition that the disease was introduced into China from France, but at the same time it is not altogether irreconcilable with Dr. Watson's hypothesis. The world war certainly provided a unique occasion for the dispersion of diseases which may have been previously localized; and, speaking generally, there does not seem to be anything too far-fetched in the idea that through the intermingling of soldiers, many of them recruited from remote districts in their own countries, a specific infection might be released—so to speak—and be carried for the first time out of a country, such as Yunnan, where its activities had previously remained endemic and beyond the ken of trained observers. There is still a good deal that is obscure about the early history of encephalitis lethargica. Its primary appearance (or possibly reappearance) in epidemic form can clearly be correlated with the outbreak of the great war, but recent references to its antecedents would seem to suggest that its irruptions in various countries were more nearly coincident in point of time than the early successive series of published case reports might lead one to suppose. It is to be hoped, therefore, that, while clinical witnesses may yet be available, other medical observers in China will be stimulated to co-operate in the interesting investigation initiated by Dr. Watson and Dr. Pfister.

[1] Yew, H. P.: Encephalitis Lethargica, *China Medical Journal*, 1929, xliii, 80 (letter).

THE LISTER INSTITUTE.

THE annual general meeting of the Lister Institute of Preventive Medicine was held on June 19th, when the governing body presented its thirty-fifth annual report to the members. Before proceeding to give a brief survey of the researches in progress during the year in the various departments of the Institute, the report makes acknowledgement of the continued co-operation given by the Medical Research Council, the Department for Scientific and Industrial Research, the British Empire Cancer Campaign, and the International Committee for the Study of Infantile Paralysis. Grants from these bodies to skilled investigators have added greatly to the range of scientific work carried out at the Institute. We can only mention here a very few of the multifarious activities of the year under review. Professor J. C. G. Ledingham, working with Dr. McClean in the bacteriological department, has published experiments showing the possibility of propagating vaccine virus from dermis to dermis of the rabbit by intracutaneous inoculation. In the course of such passage the virus appears to acquire a greatly increased capacity for proliferation in the dermis, and a corresponding diminished capacity for proliferation in the shaved skin. In collaboration with Dr. Mary Barratt, Professor Ledingham has been investigating certain problems concerned with the generalization of the lesions of vaccinia; he has also studied the "elementary bodies" (0.2μ in diameter) in vaccine virus first described by Paschen in 1906. A systematic study of the vaccine virus *in vitro* is being carried out by Drs. Eagles and McClean; their observations throw doubt on the generally accepted view that actively growing cells are necessary to the propagation of the virus. A considerable amount of research on poliomyelitis has been undertaken, the cost being defrayed by a grant from Mr. Milbank of New York. Reinvestigation of the histology of the experimental disease in monkeys indicates that the nerve cell destruction is to be regarded as a primary event, and not due to the interstitial changes. An inquiry into the part attributed to cocci in the etiology of experimental poliomyelitis has ruled out such micro-organisms as causal factors. Attempts to reproduce the disease in rabbits have failed. Investigations bearing on the vitamin content of various Empire products are being carried out by Dr. S. S. Zilva and his colleagues in the department of biochemistry; the expenses of these are defrayed by a

grant to the Medical Research Council from the Empire Marketing Board. The work undertaken in the departments of chemistry and of experimental pathology has included researches on the antiscorbutic principle (vitamin C) and the metabolism of animals affected by scurvy; and also a large number of experiments in nutrition bearing upon the properties and distribution of water-soluble B vitamins in natural foodstuffs, and the occurrence and nature of vitamin A. In order to fill a blank in our knowledge of the biological action of light Sir Charles Martin has tried to determine what proportion of the total radiant energy of sunlight is absorbed by the skin and various fabrics and converted into heat. Absorption by the skin varied from 65 per cent. in the very fair complexioned to 87 per cent. in the negro. Dr. Korenchevsky's work on the endocrine glands has included attempts to obtain a specifically active extract from the testicle and prostate, but so far without success. Dr. Lumsden has continued his researches on cancer; after many failures results are now being obtained which promise some success in preventive vaccination against implanted tumours. During the year the national collection of type cultures has grown, over 300 new strains having been added, and 5,000 cultures distributed. In this department many useful investigations are constantly being carried out for the identification of strains on behalf of biologists who do not possess equipment and conveniences for such work. In conclusion, the report notes that a self-contained laboratory and two bungalows, with six acres of land, at the Serum Department, Elstree, have been rented to the Cancer Hospital for investigations by members of the staff of the research institute of that hospital.

CAVERNOUS SINUS THROMBOSIS.

THE paper on cavernous sinus thrombosis by Dr. E. A. Seale of Grahamstown, South Africa, which appears elsewhere in this issue (p. 1155) gives details of the recovery of one of that type of case, which is so desperate that mercifully it is equally rare. That it should be so rare is a matter of some wonder, considering the anatomical relation of these venous sinuses in the basis cranii. The cavernous sinuses lie in a relatively thin-walled sulcus of the floor of the skull, in bone which forms the roof of one of the air sinuses; this air sinus communicates with the "rabbit warren" of the nasal sinuses, and it is but little removed from the roof of the pharynx. The frequency of nasal infections makes the escape of the venous sinuses remarkable. Again, the sinuses themselves are like under-street tunnels for the number of vessels and nerves that run within the dural sheath of the sinuses and actually bulge into the passage ways. Where there are so many and such close possibilities of inflammatory reactions from contiguity, or of infections that have spread to the sinuses themselves, the rarity of thrombosis is amazing. The clinical symptoms of the disease are unmistakable. The sudden and severe proptosis of the eye, the protuberant lids and conjunctiva, and some degree of optic neuritis—all point clearly to the diagnosis of a retro-bulbar affection of great severity. And if the actual nature of the diagnosis should still be in abeyance for a few hours, it is soon settled by the appearance of the same symptoms in the other eye. Treatment is almost hopeless. All that can be done is thoroughly to open every nasal air sinus that may possibly be the seat of the primary infection, and drain them well. But unfortunately the patients are usually so ill that the surgeon may deem operative measures of any extent almost unjustifiable, even though they present the last chance; yet the patient should be given this last chance. In the few cases in which recovery has been recorded there has been permanent disability, blindness to a greater or lesser degree, and facial deformity owing to exophthalmos. The occurrence of such cases as these points to the urgency of evacuating discharges from septic air sinuses in and behind the nose, and of securing free drainage. No one doubts the urgency of such measures in mastoid disease; it is no less urgent in sinus disease. Dr. Seale is to be congratulated upon the successful treatment of his patient, and upon the fact that there was such a good measure of recovery that the woman was able to earn her living once more as a laundress. He modestly attributes her recovery to the high resisting powers of the negro.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS.

THE annual report on the museum of the Royal College of Surgeons of England issued by the conservator, Sir Arthur Keith, includes the reports of the curators of the several departments, together with a general survey of the year's work by the conservator. In the latter special mention is made of those who have contributed specimens to the museum during the year, and it is satisfactory to find that so large a number of medical men, not officially connected with the museum, take an interest and pride in it. On the pathological side the curator, Mr. C. F. Beadles, F.R.C.S., reports the addition of over a hundred and fifty new specimens; these, with the additions to other departments, will be on view in Room I of the museum from July 4th to July 27th. Special mention is made by the curator of the numerous additions to the brain and nerve series and to those of the thyroid and pituitary glands. There are also some beautiful preparations illustrating von Recklinghausen's disease, which by themselves are well worth a visit to the museum; and many individual specimens of conditions of which the opportunities for study are infrequent, such as the results of bone grafting for tuberculous disease of the spine, osteoporosis of the skull from diet deficiency, a condition resembling leontiasis of the cranium following injury, and mediastinal teratoma. A comparatively new department is that of palaeopathology, dealing with prehistoric diseases. This is a subject in which Sir Arthur Keith takes a special interest; he has already secured the aid of many possible donors in various parts of the country, and in this way has accumulated a nucleus for a section of British palaeopathology. A notable contribution to this section is due to Dr. Wingrave of Lyme Regis, who has presented a number of specimens of fossil vertebrae of the extinct reptilia; these represent the earliest traces of disease which have so far come under the eye of the geologist. In the department of human osteology Miss Tildesley has made progress in the cataloguing of the collection of human crania. When this work is completed the collection will form a valuable standard of reference in determining the racial affinities of excavated human remains. Many interesting specimens have been added in the physiological department; among these may be mentioned a series of dissections of brains of the higher primates, showing the relative development of the basal ganglia in relation to the expanse of the cortex. From these dissections it appears that in the human brain the basal ganglia have undergone as great a progressive expansion as the cortex. The curator of this department, Mr. R. H. Burne, F.R.S., has continued his investigations on the component of the vascular system of bony fishes, which was discovered by him; and several researches of interest have been carried out by other investigators. Under the care of its honorary curator, Sir Frank Colyer, the odontological section is now one of the most progressive and rapidly expanding parts of the museum; every effort is evidently being made by him to render the collection representative in every detail. In the historical department Mr. C. J. S. Thompson, the

honorary curator, is able to report the addition of a large number of surgical instruments, most of them presented by that indefatigable antiquarian Dr. F. W. Cock.

BILHARZIASIS IN PALESTINE.

DR. H. GOLDIE, medical superintendent of the "Hadassa" dispensary at Tiberias in Palestine, has prepared a useful report[1] on bilharziasis in Palestine. His cases fall into two groups. The first and most numerous were all acute cases, among males aged 17 to 32, infected in Egypt or in Palestine, in the Auja district. These patients usually complained of symptoms of cystitis, and always had albumin and blood cells in the urine; the ova of bilharzia were not found on every occasion; two patients had been hastily diagnosed elsewhere, without careful examination, as cases of chronic gonorrhoea, but ova were found in their urines, and, as in the other cases, they were cured with intravenous tartrated antimony, which these patients take very well. In the second and more interesting group of 28 cases the nature of the illness was revealed by the routine urine analysis which is made for all patients of the dispensary; the patients did not complain of urinary symptoms, but of anaemia, dysmenorrhoea, and lumbar or abdominal pain, while three were found to have pneumonia. Ova were present in all the urines, with blood cells, and most patients had albuminuria, which was generally slight. All the 28 were Jewish immigrants from Arbela in Mesopotamia, their ages ranging from 10 to 60; 26 of them were female and only 2 were men, and they had been in Palestine from two to nine years. The whole of this colony, 82 persons in all, was examined; 28 patients had the characteristic ova, 16 only cells, and the rest were apparently well. The men were shopkeepers or craftsmen; the high infection rate of the women was explained by the fact that at Arbela they had had to wade out twice a day into the stream to fill their water jars. They had not set up an endemic focus of the disease in Palestine, for there are no Bulinus snails about Tiberias. This group of enfeebled people reacted badly to tartrated antimony, which gave rise to unpleasant cough or giddiness. Other preparations were tried, therefore, and Dr. Goldie was most successful with antimosan in intramuscular injection, which was usually painless. He began with 2.5 c.cm. of a 5 per cent. solution; after the dose of 40 c.cm. the ova generally disappeared, but the proof of the death of the parasite—absence of the ova from the urine three months later—was only expected if treatment had continued until 65–70 c.cm. had been administered.

PASTEUR'S EARLY WORK ON THE NATURE OF INFECTIVE DISEASE.

THE beautiful edition of Pasteur's works which is being issued by Masson et Cie under the editorship of Professor Pasteur Vallery-Radot, and is to be completed in seven volumes, should find a place in every medical library. The fourth volume, containing the studies on silkworm disease, has been referred to already in this *Journal* (March 5th, 1927, p. 436). The fifth volume,[2] recently issued, contains the work published in 1876 under the title "Studies in beer, its diseases, the causes which produce them, and the method of rendering it stable; with a new theory of fermentation." The famous researches described in this volume foreshadowed in the clearest manner a true and scientific comprehension of the nature of infective disease, at a time when the prevailing doctrine was that disease arose "in us, from us, and by us." Pasteur clearly foresaw the approaching revolution of ideas on this subject; "it is possible," he writes in his preface, "that an unexpected light is about to be thrown on the causation of contagious disease." He showed how the normal alcoholic fermentation of beer might be deranged owing to its accidental association with other forms of fermentation, each with its specific organism and each producing definite symptoms or signs in the form of "turning," viscosity, putridity, or acetic or lactic acidity. "From the physiological point of view all these ferments are equivalent. The botanist and savant, students of nature, give equal attention to plants whether they are useful or hurtful, because they are subject to the same natural laws; but industry and hygiene have other standpoints." Analogous phenomena occurring in man and animals would be regarded as diseases. The suggested analogy proved to be sound, and the important principle of specificity in bacterial disease became securely established on a scientific basis. A recrudescence of the theory of spontaneous generation, chiefly through the influence of Bastian, acted at the time as a slight obstacle to the general acceptance of Pasteur's views, but the theory received its final quietus at the hands of Tyndall, a letter from whom, referring to this subject and to Pasteur's work generally, is included in the present volume. "For the first time in the history of the science," he writes, "we have the sure and certain hope that, in regard to epidemic diseases, medicine will shortly be delivered from empiricism and placed on a genuine scientific basis; when this great day arrives, humanity, in my opinion, will remember that its gratitude is due principally to you."

[1] *Arch. für Schiffs- u. Tropen-Hygiene*, April, 1929, p. 198.
[2] *Œuvres de Pasteur*. Réunies par Pasteur Vallery-Radot. *Tome v*: Études sur la Bière. Paris: Masson et Cie. 1928. (Imp. 8vo, pp. 361; 85 figures, 12 plates. 120 fr.)

VICTOR HORSLEY LECTURE.

THE third Victor Horsley Memorial Lecture will be delivered by Sir Thomas Lewis, M.D., LL.D., F.R.S., Physician to University College Hospital, who has taken as his subject "Observations relating to the mechanism of Raynaud's disease." The lecture will be given at University College Hospital Medical School, Gower Street, W.C., on Tuesday, July 16th, at 5 p.m., under the chairmanship of Sir John Rose Bradford, K.C.M.G., M.D., F.R.S., President of the Royal College of Physicians of London. Admission to the lecture is free on presentation of visiting card.

THE Metropolitan Asylums Board had before it on June 22nd a statement prepared by the medical superintendents of the small-pox hospitals showing the condition as to vaccination of patients suffering from small-pox admitted from January 1st, 1928, to May 31st, 1929. The statement showed that out of 1,057 cases admitted 163 were said to have been vaccinated in infancy only, that the youngest of these 163 cases was 15 years 11 months old, and the evidence of vaccination was doubtful, and that the next youngest cases were 19 years old. Eleven cases were stated to have been vaccinated and revaccinated, but in 7 of these cases the evidence of revaccination was either not present or was doubtful. In the remaining 883 cases there was no evidence of vaccination prior to infection.

ON Thursday, July 18th, the Prince of Wales will open the new building of the London School of Hygiene and Tropical Medicine which has been erected, as a gift of the Rockefeller Foundation, in Keppel Street, W.C. The foundation stone was laid by Mr. Neville Chamberlain as Minister of Health, on July 7th, 1926.

THE British Orthopaedic Association and the American Orthopaedic Association will hold a joint meeting in London on Thursday, Friday, and Saturday, July 4th, 5th, and 6th.

ENGLISH HOSPITAL PLANNING.

On May 27th Mr. H. PERCY ADAMS, F.R.I.B.A., delivered a lecture on English hospital planning, before the Royal Institute of British Architects. After some introductory remarks, Mr. Adams said that the ideal hospital site was high ground sloping gently from north to south or south-east, and sheltered by trees on rising ground. It should be away from noise and dirt, have good roads on the northern side, a subsoil of chalk, rock, or gravel, and adequate facilities for water, gas, and drainage. Possibly, in future all large hospitals would be outside the town areas, and only central clearing stations for casualties and out-patient departments in the large towns themselves.

Lay-out of the Buildings.

The various hospital departments, said Mr. Adams, should be arranged in blocks, each in the position most suitable for its individual requirements and in relation to the others, and affording scope for future extension. The administration block should be central, with a main corridor running east and west; the wards should be at right angles, running north and south with cross-ventilation, the out-patient and casualty departments easily accessible from the street, and the dispensary and electrical departments available for both in- and out-patients. The kitchens should be accessible for tradesmen, and centrally placed for serving patients and staff; the nurses' home should be away from, but easily accessible to, the hospital. The boiler-house should be at a low level, and as central as possible, and the chimney shaft away from the prevailing wind.

The Wards.

Mr. Adams drew attention to the recent tendency to reduce the size of the general wards and to have in each unit side wards for special cases. A width of 22 ft. seemed sufficient for a general ward of 16 beds, if it was not used for clinical teaching. The head space for each bed should be not less than 8 ft. from centre to centre, rather more than this for maternity and special cases and a little less for children. Recently many doctors had advocated the plan of placing the beds parallel to the windows. For the new hospital at Southend Mr. Adams was proposing T-shaped wards, containing 24 beds, in sections of 4, 4, and 16, with the beds parallel to the windows, and, to facilitate supervision, having the upper parts of the screens against the heads of beds made of clear plate-glass. The system most generally adopted for heating the wards was by means of radiators under the windows. Heated pipes round the walls, however, were cheaper than radiators, no more difficult to clean, and they gave an equable temperature; they presented, perhaps, a larger surface for the accumulation of dust. The open-air chapel at the King Edward Sanatorium was warmed by means of pipes under the stone-flagged floor. After describing in detail the structure of the general ward, of its doors, windows, and floor, Mr. Adams said that during the past few years the sanitary adjuncts of the ward had been placed near its entrance in order to be under better control, to simplify the plumbing, heating, and drainage, and to be available for the side wards; a ventilated lobby between the sanitary adjuncts of the ward was an advantage.

The w.c.'s should be at least 5 ft. by 2 ft. 9 in., and their doors should always open outwards. The sink room should be at least 10 ft. by 8 ft., with a sink for cleaning bed-pans and urine bottles. An open-air balcony should be provided for refuse bins, and a lavatory for patients; the bathroom should have an area of at least 9 ft. by 8 ft., with the head of the bath facing the window, and its side at least 2 ft. from the wall. In connexion with the wards, Mr. Adams said there should be a ward kitchen not less than 16 ft. by 14 ft., a small, well-ventilated larder, a clinical room, a small sterilizing room in surgical units, a record room for the use of the registrar, a linen store, a patients' storeroom containing numbered lockers, a storeroom for bedrests, splints, etc., a service room for the cleaners' brooms and pails, a nurses' w.c., a day room, a class room, and possibly a sisters' room. It was an advantage to have a balcony at the south end, partly enclosed on the east and west sides.

Wards for paying patients should have easy access to the special departments of the hospital and to the general kitchen, which might be provided with a section where special foods could be prepared. The wards should be supplied with lavatory basins and fitted with wardrobes.

The Operating Theatres.

The most satisfactory provision for students witnessing operations, said Mr. Adams, was a raised platform at the north end of the theatre, having a separate access from outside the theatre. It was an advantage to concentrate the general operating theatres in one block rather than to have them dotted about the hospital. The department should be separated from the main corridor by a ventilated lobby, and should be in a quiet position and not overlooked. The usual plan was to have the theatres with due-north light and the entrance at the south; on one side there should be a room for cleaning the bowls, instruments, etc., and on the other a room for the sterilizers. Adjacent to the theatre there should be an anaesthetizing room, a room for surgeons to change in, a sisters' room, and an instrument room. In large hospitals there were usually special theatres for the ophthalmic, maternity, and casualty departments, and often in the children's block theatres for tonsils and adenoid cases. Mr. Adams suggested that the dimensions of a theatre should be not less than 22 ft. long by 18 ft. wide by 14 ft. high, with a vertical north window 12 ft. wide, and, among other practical details, mentioned the need for setting the glass in frames with rounded corners, an outside balcony giving cleaners access to the windows, provision for cooling the theatre in hot weather, and the desirability of building instrument cabinets into the walls of the theatre with flush, clear glass doors. The flush panel radiator was excellent for heating purposes, and it was advisable to have some of the radiators heated from the general hot-water system, supplementing them with radiators heated by the steam supply, which was always available for sterilizers and cooking. In cities it might be an advantage to use the plenum system of heating and ventilation, so that the air could be well filtered and its temperature regulated before being delivered into the theatre. The doors of the theatre and anaesthetizing rooms should be at least 4 ft. wide and perfectly flush on both sides. For lighting the table the new scialytic shadowless lamp seemed to be in favour. Mr. Adams described also the structure and equipment of the washing-up room, the sterilizing room, and the anaesthetic room.

Electrical Department.

This department, he said, was most conveniently placed on the ground floor, not in the basement; it was essential to place the high-tension generating plant in a room by itself, next to the *x*-ray room, and if there were separate rooms for therapy and diagnosis the transformer room should be placed between them and the door fitted with a switch, so as automatically to cut off the current when the door was opened. The ceilings of *x*-ray rooms should be arranged for suspending the overhead high-tension gear in connexion with the apparatus. Access to the dark room should be either by a revolving light lock door or by a maze light lock without door or even curtain. There should also be a film-filling room, a room for the viewing cabinet, a general storeroom, doctors' and nurses' rooms, and waiting rooms and dressing rooms for patients. For the protection of operators walls were built of bricks made of barium sulphate, or covered with barium plaster or lead, and doors were sheathed with lead. The protection for 100,000 volts was 1.5 mm. of lead, and for 200,000 volts 4 mm. of lead. The thickness of bricks and ordinary concrete that would give protection equal to 1.5 mm. of lead was approximately 5 inches. To protect the dark room and storeroom from accidental exposure the walls should be covered with lead 1 mm. thick. Artificial ventilation was required, and could be supplied by a centrifugal exhaust fan with fresh air (light-protected) inlets.

Venereal Diseases Department.

In planning this department the first principle was to secure privacy for patients and facilities for quick service to the staff. Essentials were a clerk's room next to the consulting room, a patients' waiting room with lavatory accommodation, a general service room for routine clinical pathology, and a

series of cubicles entered by the patients direct from a corridor or waiting room and planned to secure privacy. All the rooms should have the floors and walls of impervious materials and easily cleaned.

Prevention of Noise.

Having described in some detail the architecture of the casualty department, the post-mortem room, laboratories, and the administrative blocks, Mr. Adams said that to guard against noise corridor floors should be insulated, a good method being to have a margin of hard material like terrazzo, with the centre slightly sunk to take the rubber cemented down to it. Lift gear should be placed in insulated rooms and pumps for heating mains connected with flexible rubber. At the entrance to the duct for the main from the boiler-house a felt curtain would help to deaden sound. Self-closing doors with air-pump springs were a great boon for all wards.

POST-VACCINAL ENCEPHALITIS.

NEWSPAPER reports of recent inquests in the London area have reawakened interest in the occurrence of acute disease of the central nervous system after primary vaccination.

The pathology of encephalo-myelitis arising in the course of virus disease and the exanthemata was discussed in the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association in Cardiff last year; we reported the proceedings in the *Journal* of August 4th, 1928 (p. 202), and the introductory papers by Professors H. M. Turnbull and James McIntosh appeared in our issue of August 25th (pp. 331 and 334). The debate at Cardiff, on July 25th, turned largely on the question of post-vaccinal encephalitis, and in the same week the report of the Committee on Vaccination, presided over by Sir Humphry Rolleston, was presented to Parliament by the Minister of Health.[1] A considerable part of the Rolleston Committee's report was devoted to diseases of the central nervous system following vaccination, and it included the full text of the report by an earlier committee which went into this subject, under the chairmanship of Sir Frederick Andrewes, between November, 1923, and May, 1925. An account of the findings of both committees appeared in our issue of August 11th (p. 266).

The Andrewes Committee Report.

The members of the Andrewes Committee (Professor McIntosh dissenting) came to the conclusion that it was extremely improbable that the 62 reported cases of post-vaccinal encephalitis in this country could have been due solely to the vaccine virus. On the other hand, they held it not altogether improbable that vaccination might here and there have precipitated encephalitis in a person harbouring another virus. It seemed to them conceivable that "a virus, such as that of poliomyelitis, which can only occasionally set up an encephalitis in a normally resistant person when unaided may, if another virus, such as that of vaccinia, is present in the brain, be enabled to do so." The provisional opinion they reached was that the nervous sequelae under consideration were most satisfactorily explained on the assumption that the vaccine virus had stimulated to activity some latent neurotropic virus harboured by the vaccinated subject, and that to such a combination of viruses might be attributed any notable peculiarities in clinical course, histological picture, and generally lethal character of the cases.

The Rolleston Committee Report.

The Rolleston Committee, which investigated a further series of 25 cases, went very fully into the various theories that had been put forward in explanation of the occurrence of post-vaccinal encephalitis. While it acquitted the vaccine virus of being the *sole* cause of the disease it was unable to exonerate vaccination from playing some part in its causation. Its considered opinion was that the co-operation of vaccinia with the viruses of poliomyelitis, encephalitis, or some unknown neurotropic virus, must be accepted as a working hypothesis of causation, pending further research into the nature and properties of neurotropic viruses in general. This opinion is shared by the Commission on Small-pox and Vaccination of the League of Nations, which reported subsequent to the publication of the Rolleston report. The Rolleston Committee pointed out the extreme rarity of post-vaccinal nervous disease, particularly after revaccination and after primary vaccination in early infancy, from which it followed that early infancy must continue to be regarded as the time of choice for primary vaccination. In order to encourage vaccination the Committee recommended that the customary four insertions of vaccine should be replaced by one, made with a minimum of trauma, and that multiple scarification and (or) cross-hatching should be deprecated. Vaccination in multiple insertions should, however, be available for such persons as desire to obtain the maximum protection against small-pox obtainable at one operation.

The Geneva Memorandum.

The risk of post-vaccinal encephalitis has been discussed also in a memorandum issued last autumn by the Commission on Small-pox and Vaccination of the Health Organization of the League of Nations at Geneva, to which reference was made in our issue of September 29th, 1928 (p. 582). The Commission emphasized the fact that post-vaccinal did not necessarily imply propter-vaccinal; that in view of the millions of vaccinations carried out in any given year there must always be present in the community very large numbers of people subject to the ordinary chances of life, and only incidentally under the influence of the vaccinia virus. Such people were no more immune from disease of the brain and nervous system than anyone else, and there was therefore no reason why the coincidence of vaccinia with a true encephalitis should not be expected to occur. Encephalitis, moreover, occurred as a complication of numerous infections—for example, measles and various forms of toxaemia—and in so far as vaccinia was an infection it might be considered legitimate to regard the cases under consideration merely as instances of ordinary post-infective encephalitis. The Commission, however, was of opinion that there were practical reasons for considering post-vaccinal encephalitis as a separate pathological and clinical entity. Its general conclusion was that the virus of vaccinia could not of itself be considered responsible for encephalitis. It considered rather that some unknown factor—perhaps a filter-passing virus or a latent virus—determined the occurrence of the complication in question.

The age distribution in the incidence of post-vaccinal encephalitis is of particular interest; the bulk of the cases have occurred in children between the ages of 3 and 12. Moreover, the disease follows revaccination of older children and of adults with the utmost rarity, a fact which, taken in conjunction with the almost complete immunity of the first two years, provides ample reason for emphasizing the value of undertaking primary prophylactic vaccination against small-pox as early as possible in life.

Summary.

The rare occurrence of post-vaccinal encephalitis is no reason for lightly estimating its importance: the risk, though small, is of a very dangerous disease. It is necessary, however, to remember that vaccination is not believed to be its sole cause, nor is there any evidence of its transmission by vaccine lymph, however manufactured. In view of the fact that the majority of recorded cases have occurred in persons primarily vaccinated after infancy, it is desirable to advocate more strongly than ever the need for carrying out primary vaccination of infants between the ages of 2 and 6 months. Continued protection against small-pox could then be ensured by revaccination when the child first enters school, and again when he reaches school-leaving age. To avoid undue reaction it would be well to carry out vaccination in one or two insertions, each made with a single linear incision, rather than in the customary four.

[1] The Report of the Committee on Vaccination. Cmd. 3138. London: H.M. Stationery Office. 1928. 7s. net.

Scotland.

Honorary Graduates of Glasgow University.

DR. CHARLES OLIVER HAWTHORNE, F.R.C.P., chairman of the Representative Body of the British Medical Association, was one of a notable group of honorary graduands at the graduation ceremony at Glasgow University on June 19th. In presenting Dr. Hawthorne for the honorary degree of Doctor of Laws (LL.D.), the Dean of the Faculty of Law (Professor T. C. Wright) said that he was a distinguished student and prizeman of the University, where he had graduated with honours. For over a decade he was a much appreciated teacher in the Western Infirmary. Thereafter he transferred his energies to London and became one of the inaugurators of the Polyclinic, the first real post-graduate institution in that city. Gifted with a brilliant and a fearless mind, his trenchant pen was always at the service of common sense and justice in medicine. In addition to his strictly professional duties, Dr. Hawthorne had taken an active part in the affairs of the British Medical Association. In recognition of his services to medical science the Senate desired that there should be added to his Doctorate of Medicine the further degree of Doctor of Laws. At a luncheon held after the graduation ceremony, Sir Donald MacAlister, Bt., principal of the University, in proposing the toast of "The Honorary Graduates," said of Dr. Hawthorne that they greeted him as one of their many alumni, who, having taken high honours in their own schools, had gone forth to seek and find fame in the wider world of London. They now acclaimed him Doctor of Laws in recognition of his success as a medical statesman and organizer. By fearless speech and pointed pen he had won for himself a leading place in the counsels of his profession, and he now directed the Representative Body of the widely influential British Medical Association with vigour and sagacity.

Among others who received the honorary degree of LL.D. on this occasion were Sir John Cargill, Professor Carslaw of Sydney, Madame Curie, the Earl of Elgin, Provost Gwynn of Trinity College, Dublin, Herr Fritz Kreisler, Lord Lugard, Lord Provost Sir David Mason, and Professor Merriman of Harvard. Madame Curie received a special ovation. She was introduced as the professor of physics and director of the Curie Laboratory of the Radium Institute in the University of Paris, a woman celebrated throughout the world for her epoch-making discoveries of radium and polonium. In company with her late husband, Dr. Pierre Curie, and M. Henri Becquerel, she was awarded the Nobel Prize in 1903; and again in 1911 she received the Nobel Chemistry Prize for her work in radio-activity. In recognition of her services to science, and in appreciation of her work for humanity, the Senate sought to do itself honour by enrolling Madame Curie among its honorary Doctors of Laws. Herr Kreisler played to the students in the Bute Hall on the afternoon of the graduation. His visit was appropriate, because of the establishment this year of a chair of music in the University.

Appointments at Aberdeen and Inverness.

Dr. Harry J. Rae has been appointed medical officer of health for the city of Aberdeen in succession to Dr. J. Parlane Kinloch, now chief medical officer to the Department of Health for Scotland. Dr. Rae is a native of Aberdeen, where, after receiving his preliminary education at the grammar school, he graduated at the university in arts in 1907, and in medicine, with honours, in 1911. In 1914 he obtained the Diploma in Public Health of Aberdeen University, and became assistant school medical officer for Aberdeenshire. Thereafter he acted as assistant tuberculosis officer, and, after a period of war service, deputy county medical officer of health. He was appointed chief medical officer for Aberdeenshire in 1925, when the scheme for the co-ordination of the medical services in the county came into operation. The directors of the Northern Infirmary, Inverness, have appointed Dr. R. C. Bannerman to the newly created full-time post of pathologist and bacteriologist to the hospital. Dr. Bannerman is a graduate of Edinburgh University, having qualified in arts in 1910, and in medicine, with first-class honours, in 1914.

The Scottish Health League.

The Scottish Health League is an amalgamation of a large number of varied interests in health education. Its president is the Duchess of Atholl, and Sir Robert Philip is one of its vice-presidents; the council includes a number of medical practitioners and dental surgeons, and there is an advisory council of medical officers of health. The aim of the league is to disseminate knowledge among the people in regard to the most efficient methods for the maintenance of health and the prevention of illness. It does not seek to relieve local authorities of their responsibilities, but to establish a link between the public and the responsible officers of the authorities, so that the existing powers may be used to the utmost advantage. To attain this object branches of the league are being formed throughout Scotland. Posters, leaflets, health books, lantern slides, films, and lecture outlines are being distributed from the headquarters of the league, and lecturers on health education matters are sent out on request. An attractive periodical, *The Scottish Health Magazine*, now in its third issue, is published monthly, price 6d., at 29, Cadogan Street, Glasgow, C.2, under the editorship of Dr. M. Menzies Campbell.

Treasurership of the Edinburgh Royal Infirmary.

Mr. William Strathie Caw, who has given forty-nine years' loyal service to the Royal Infirmary of Edinburgh, is retiring from the office of treasurer and clerk at the end of the year. The managers have appointed Mr. Henry Maw as his successor. Mr. Maw, after receiving a training as an accountant, took up hospital administrative work in 1912, and acted for eight years as accountant and assistant secretary of the Bradford Royal Infirmary. Since 1920 he has been secretary of the Clayton Hospital at Wakefield, where he has acquired a high reputation as an organizer and administrator.

England and Wales.

Honours for Sir Ronald Ross.

On the evening of June 21st Sir Ronald Ross received the Manson Medal at the hands of the president of the Royal Society of Tropical Medicine and Hygiene, and the triennial Gold Medal of the West London Medico-Chirurgical Society at the hands of the president of that body. In both places the presentation was made in very felicitous terms and to the accompaniment of hearty applause from those assembled. Sir Ronald Ross, who was obviously in a very weak state of health, contented himself with a word of thanks in each instance. At the Royal Society of Tropical Medicine Dr. G. Carmichael Low recapitulated some of the important landmarks in the work of Ronald Ross. When he began work in India in 1889 Sir Ronald was attracted to the study of malaria, a disease which was not only very prevalent there, but was one of the main causes of death among the natives of the country. Returning to England on leave in 1894 he had the good fortune to meet Manson, and to listen to the latter's hypothesis that "the flagellate bodies are stages in Leveran's parasites which produce motile spores for the purpose of infecting mosquitos which happen to suck the blood of patients." Struck by this idea, and stimulated by his conversations with Manson, Sir Ronald, on his return to India in 1895, started on his world-famous researches, which were ultimately to prove the hypothesis suggested by Manson and to give the world the true history of the malarial parasite in its passage from man to man. Dr. Low went on to say that the story of the difficulties, heart-breaking disappointments, and laborious and trying work carried out in an exhausting tropical climate, crowned eventually by complete success, was to be found in Sir Ronald Ross's memoirs; and no one reading that account could fail to appreciate the grit, energy, determination, and ability of the man who carried it

out. The remarkable feature of his work was that he completely elucidated the whole cycle of the malarial parasite. This had stood to the present day almost exactly as he described it, and had not required altering in any respect. So often did it happen that a big discovery by one man was changed out of all recognition by later investigators, who took the major share of the credit. Sir Ronald Ross had had many honours for his work, but Dr. Low ventured to think that the Manson Medal would rank high among them because it associated his name with that of his old friend who had suggested the hypothesis and had helped and encouraged him in every way during his work in India. It would seem strange, therefore, and incomplete, if a Manson Medal did not include the name of Ross among its recipients, because the names of these two great men would go down to posterity together as the conquerors of malaria. At the West London Medico-Chirurgical Society, on the occasion of the Cavendish Lecture, reported at page 1164 of this issue, Dr. H. H. Sanguinetti handed to Sir Ronald Ross the Gold Medal, and in doing so said that the society honoured itself in honouring one whose work had been of such immense value to the Empire and to the world. It was due to his work that, for example, it had been possible to rid the Panama Canal zone of disease and to make safe and healthy vast rubber plantations.

Royal Society Conversazione.

At the second summer conversazione of the Royal Society, held on June 19th, the four rooms at Burlington House were, as usual, full of interesting and varied exhibits for the entertainment of Fellows and guests. The Strangeways Research Laboratory again contributed a collection of microscopic specimens illustrating recent work on embryonic development *in vitro*. The isolated femurs of six-day fowl embryos show a remarkable capacity for self-differentiation. When removed from the body and cultivated in a watch-glass containing suitable culture-medium the femurs may increase to more than three times their original length, and they also undergo what appears to be a normal anatomical and histological development, including ossification. Further, just as in normal development, the femurs cultivated *in vitro* synthesize a phosphatase, which may effect calcification by liberating inorganic phosphate from phosphoric esters. On cultivating undifferentiated three-day embryonic limb-buds in a watch-glass these have been found to differentiate to form small-celled cartilage, but not enlarged cartilage cells, osteoblasts, or bone, nor is phosphatase synthesized by these explants. This work was by Dr. H. B. Fell and Dr. R. Robison. Further work by Dr. R. G. Canti and others, under the auspices of the same laboratory, showed the effect of radium on mitosis *in vitro*. Tissue cultures were exposed for a short time to radium and subsequently incubated at 37° C. Irradiation was found first to cause a reduction in mitosis, followed by a compensatory increase, bringing the mitotic figures to a point largely in excess of the controls, and, finally, after six hours, mitosis fell to normal. The effect of temporary exposures of the cultures to low temperatures was strikingly similar to that seen with radium. Tissue cultures exposed to *x* rays for a short time showed a reduction in the number of cells in mitosis, and, for a longer time, a degeneration and breaking-down of individual cells. Some very interesting exhibits came from the natural history departments of the British Museum. These included fossil specimens of extinct mammals and fish, the colouring and patterning of certain woodpeckers, another exhibit illustrating the similarity of form that may occur in insects belonging to different orders, as well as in widely different sections of the same order, also a model of a remarkable abyssal cephalopod, the specimen being obtained at 750 fathoms in the Pacific, and representing the most primitive member of the octopoda, or an intermediate between that order and the decapoda (squids and cuttle-fish). Then Dr. H. Eltringham illustrated a wonderfully minute study on the scent-producing organs of insects. Scents are produced and employed by insects in courtship and in defence to an extent difficult for the ordinary person to realize. The very complicated organs found in the heads of minute caddis flies—the whole head is rather less than one-fiftieth of an inch across—were quite amazing as seen in Dr. Eltringham's models. The Potato Virus Research Station, Cambridge, showed how it was possible to alter the character of the virus of potato mosaic by passing it through another plant host, and also by using different methods of transmission. When the virus is inoculated into tobacco with the needle an infectious disease known as "ringspot" is produced, and progressive needle inoculation of ringspot through successive tobacco plants increases the virulence of the virus until it becomes almost lethal to the plant. When ringspot is transmitted to healthy tobacco by greenfly instead of by needle dark green mottled lines are produced, and not rings, and when either of these diseases is returned to the healthy potato an intensified and highly infectious form of the original mosaic is produced, showing that passage through the tobacco plant has induced a change in the nature of the virus. There were also shown at Burlington House many experiments in physics of great interest. Mr. J. E. Barnard illustrated his method of dark-ground illumination with ultra-violet light in the microscopy of very small bacteria, beyond the limit of optical achievement of the objectives employed. Among other exhibits was a cosmetic found in the tomb of Tut-ankh-Amen at Luxor, which had been carefully analysed, and might be supposed to have consisted, originally, of nine-tenths of neutral animal fat and one-tenth of some resin or balsam. Mr. A. A. Campbell Swinton's photographs of eminent scientific men were also of great interest. Mr. Swinton has been fortunate enough, as an amateur photographer, to have had as his sitters all the most celebrated scientific men of this country since Huxley, of whom he has a photograph, taken by the wet-plate process, dating from 1877.

Livery Dinner of the Apothecaries' Society.

At the Livery Dinner of the Society of Apothecaries of London, held at Apothecaries' Hall on June 18th, the Master, Lieut.-Colonel C. T. Samman, spoke of the forward movement lately entered upon by the Society. In particular, a committee had been set up to give advice in regard to light treatment, its object being to enable doctors, wherever they might be, to find some practitioner in whom they could place implicit trust when such treatment was required. Another new departure consisted in infusion of fresh blood into the Court, and he hoped that in that way the interest of the Society and the profession would be furthered. A little more than a year ago, he said, it had been discovered that the woodwork of the Society's hall had been ravaged by the death-watch beetle, and but for the skill of the surveyor, Sir William Wells, absolute disaster would have followed. The fate threatened was averted at a cost of about £20,000, and a generous response had been made to an appeal for funds which the Society had sent out to all its members. There was still, however, a large deficit, which he invited the Livery to make good. In the course of the evening Dr. R. Whiteside Statham presented Sir William Hale-White to the Master, to receive the honorary freedom of the Society. There was a close similarity, said Dr. Statham, between the presentation that was being made that evening and one which had taken place three hundred years ago: in the year 1629 Thomas Johnson, a great Royalist and an authority on the properties and actions of drugs, had been admitted to the freedom of the Society; Sir William Hale-White in his turn was the greatest living authority to-day on therapeutics. Like his prototype in the seventeenth century, he had served in His Majesty's Forces, and the Society, by admitting a man of his distinction, was honouring the profession and itself. Sir William Hale-White, in replying, said that he all the more appreciated the honour conferred on him because, under the ordinances, the number of honorary freemen was limited to ten, and frequently the full complement did not exist. Sir Ewen J. Maclean, president of the British Medical Association, and Mr. Francis Weston replied to the toast of "The Guests," which had been proposed by Sir George Buchanan, the junior warden, and the toast of "The Livery" was replied to by Sir George Makins and Dr. J. P. Gibbons.

Centenary of King's College, London.

The Duke and Duchess of York inaugurated, on June 25th, the centenary celebrations of King's College, London. The ceremonies continued during the week and included a thanksgiving service in Westminster Abbey and the dedication by the Archbishop of Canterbury of a new wing of the students' hostel in Vincent Square, Westminster. King's College was a pioneer in the provision of hostels for students, and in addition to the delightful building in Westminster, which is for men, it has a women's hostel at Bayswater, and another men's hostel at Denmark Hill. The college buildings in the Strand have some very interesting medical associations. Here Lister, it will be remembered, held a professorship, and in the neuro-pathological laboratory Sir David Ferrier carried out much of his experimental work. The University of London, to which the college is affiliated, continues to teach in King's Buildings the preliminary and intermediate medical studies, but King's College Hospital, which was formerly in close proximity, was removed many years ago to the south-eastern suburbs. Other notable names associated with the college history are, in physics, those of Clerk Maxwell and Wheatstone; in literature, Thomas Hardy and Edwin Arnold; and in theology, Wace, Gore, and F. D. Maurice. Both King's and University College, which date from the same period, suffer from the fact that they possess neither the air of antiquity, like Oxford and Cambridge, nor that of modernity, like the newer provincial universities, and for that reason, although their achievements have been very noteworthy, and they have supplied a stream of brilliant men to the industries and professions, they have not attracted endowments. King's College has been hampered by lack of room. A new building has lately been taken above the adjacent underground station of Aldwych—a much less classical environment than the wing of Somerset House, where the main building is situated—and here several of the departments are housed. Those of chemistry and anatomy, however, still suffer from cramped quarters. It is hoped, in view of the interest which the centenary may be expected to arouse, that not only will it be possible to obtain the funds necessary for completing the hostel extension at Vincent Square, but also those for rebuilding one of the blocks in the Strand so as to provide an extension for the department of chemistry, and a new anatomy building above it. It is stated that the number of students at King's has doubled since the war, and that it includes at the present moment over a hundred visiting students from the Empire overseas and foreign countries.

Ireland.

The Changing Foundations of Materia Medica.

A PRESIDENTIAL address of unusual range and interest was delivered from the chair at the sixty-sixth annual British Pharmaceutical Conference which has been held in Dublin during the past week. Mr. R. R. Bennett, F.I.C., gave in outline an account of some of the more striking changes in materia medica wrought by progress in chemistry and biochemistry, in physics, in physiology, and in the science and practice of medicine. The present, said Mr. Bennett, was an age of standardized products, and isolated active principles had to a considerable extent replaced the parent drug. He mentioned morphine, cocaine, atropine, quinine, and emetine as a few of the older well-known examples of the active plant alkaloids which in large measure had replaced in medical practice the drugs wherein they occurred. More recently ergotoxine had been made from ergot on a commercial basis. Among the achievements of recent years was the replacement of the active principles of certain natural products by identical substances synthetically produced at a cost which compared favourably with that of the natural article. The price of synthetic thyroxin, Mr. Bennett said, was half that of the natural product obtained from the thyroid gland. Another case in point was the replacement of the natural ephedrine by the synthetic product, though the latter did not possess the same therapeutic activity as the natural alkaloid. Both in the animal and in the vegetable world Nature effected her syntheses within a very small range of temperature and with very mild reagents. Fusions with alkali, treatment with powerful dehydrating agents, and sealed-tube reactions under pressure were unknown to her. The syntheses of the laboratory were invariably performed in a manner which would destroy the apparatus in which nature works. Nature also possessed the secret of optical activity, and left to art the synthesizing of optically inactive forms only, but most of these optically inactive forms could now be resolved. Mr. Bennett went on to point out that in addition to the substances occurring naturally in the vegetable and animal kingdoms there were an enormous number possessing valuable medicinal properties which were obtained solely by a synthetic chemical process. From the synthesis of urea by Wohler just a hundred years ago to the recent synthesis of thyroxin, vast numbers of organic compounds had been synthesized. Many synthetic local anaesthetics had been introduced as a result of the search for substitutes for the natural alkaloid cocaine. The toxicity of the members of this group—including ethocaine, borocaine, eucaine, and stovaine—was less than that of cocaine, but their anaesthetizing power was less also. Avertin, a tribrom-ethyl alcohol, was the latest addition to the drugs at the disposal of the anaesthetist. A great amount of work had also been done in the development of the use of synthetic dyes in therapeutics. The study of dyestuffs had been directed to the treatment of disease due to protozoal infection, and some very useful compounds had been discovered. Trypan blue had proved particularly successful in the treatment of "red water" fever in cattle. Some of the dyestuffs first studied for their trypanocidal effects had been found more useful as bactericides, as, for example, acriflavine and auramine. Mercurochrome had resulted from the search for an actively antiseptic organic mercury compound possessing the antiseptic properties of the inorganic mercury salts, and at the same time free from the disadvantages of the latter in the way of destructive action upon animal tissue. Tetraiodophenolphthalein had been successfully applied in *x*-ray technique for cholecystography. Again, the control and cure of protozoal diseases by means of various organic compounds of arsenic and antimony was an achievement of outstanding importance. Mr. Bennett mentioned also the work done on chemotherapy, and the need for a closer alliance of chemical, biochemical, pathological, and clinical workers in this direction. A start had been made, he said, through a permanent committee of chemists and biologists, in organizing chemo-therapeutic research, and a separate committee would organize and direct the necessary clinical trials of substances which were likely to be of importance in medicine. An experiment of great interest in this connexion was the establishment of a chemical research laboratory at Teddington, under the general scheme of work directed by the Department of Scientific and Industrial Research; here work will be done in collaboration with the Medical Research Council, with the object of obtaining experimental evidence of the relationship between chemical constitution and physiological activity.

Ballinasloe Mental Hospital.

In the course of the annual report presented by Dr. John Mills, resident medical superintendent of Ballinasloe Mental Hospital, the following outstanding facts are mentioned. Attention has frequently been drawn to the advantage to the patient of seeking treatment at the early stage of the disorder, but the inrooted prejudice against admitting that there is any insanity in the family still exercises a potent influence in deterring relatives from seeking the provided means of treatment, and this is often not used until some indefensible unsocial act is committed which brings the patient within the terms of the Dangerous Lunatics Act, under which 220 of the total number were committed. In this connexion Dr. Mills draws attention to the establishment by the governors of the Royal Edinburgh Asylum of two hospitals within their area where voluntary patients are admitted as to an ordinary hospital, and there receive the treatment most appropriate to their condition; many such patients escape

thereby what is still regarded as the stigma of certification. With the advance of knowledge of mental disorder this method of treatment is bound to secure a wider field of application than it has yet attained. In the admissions to Ballinasloe during the year under review the principal causes of insanity assigned were heredity in forty-eight cases, congenital mental defect in fifteen, puberty and adolescence in twenty-four, senility in twelve, mental stress, sudden or prolonged, in twenty-two, lesions of the brain and epilepsy in six, and disorders of gastro-intestinal system in fifteen. In thirty of the cases no principal factor could be ascertained. Dr. D. L. Kelly, inspector of mental hospitals, in the course of his report, mentioned that the general health of the patients at Ballinasloe was good; the number confined to bed was not unduly high. Seclusion was scarcely ever resorted to, but one patient had constantly to be restrained by the jacket for violence and continual resistance. He saw all the patients, paying special attention to the recent admissions; they appeared suitable cases for treatment. Some patients with whom he conversed spoke highly of their food and of their treatment generally; they appeared to be contented and comfortable. The appearance presented by the male patients was creditable to the staff. They were dressed in good materials; their clothing was sound, clean, and tidy, and their boots were polished. Indoors, the non-workers should in all cases be provided with slippers or unnailed boots. The female patients were, as usual, extremely neat and tidy. A great variety in the design of their attire was allowed, and they used their own taste in making such articles of personal dress as crochet collars, etc. This practice was to be approved of. Every endeavour was made to find employment for the patients. The men were principally engaged on farm work and at general tidying up round the institution; some worked as tailors, bakers, stokers, etc. The women were to be found at work in all divisions, sewing, knitting, rug-making, and repair and fancy work; a large number found employment in the laundry and the kitchen. The work turned out in the laundry was highly satisfactory, and the patients worked under favourable conditions.

Proposed Home for Defective Children in Belfast.

A report of a deputation from the Belfast guardians to the Ministry of Home Affairs for Northern Ireland regarding the provision of a central home for afflicted children was presented at a recent meeting of the Belfast guardians. Miss Gaffikin (the report stated), speaking for the deputation, said that their object was to impress upon the Ministry the desirability of providing one central home for defective children, whether educable or non-educable. The board of guardians would have no objection to adult mental defectives being received in the same home. Miss Gaffikin also stated that the guardians believed that the establishment of a central home was desirable on the ground of economy and of efficiency, and that it would not be in the interests of the public or of the children that the home should be carried on under the Poor Law. The home contemplated should be for the whole of Northern Ireland. The guardians expressed their willingness to co-operate in any scheme that might be put forward for running the proposed institution. Major Harris, secretary, Ministry of Home Affairs, pointed out that about 500 children had to be provided for. The deputation assured the Ministry that the guardians were prepared to share the responsibility for the cost, provided that the education authority would be responsible for educable children of school age. Major Harris later stated that the whole matter would receive careful consideration, but that it could not be promised that steps would be taken immediately.

Sunshine Home, Stillorgan.

The annual meeting of the Sunshine Home, Stillorgan, was held recently, when Sir William Wheeler presided; the Governor-General was present. The annual report stated that during the year thirty-one children were discharged cured, this number, an increase of thirteen over that of the previous year, bringing the total of cured cases to seventy-six; three were improved. The number of cases admitted during the year was forty-six, and the number undischarged on February 28th was twenty-four. There was accommodation for twenty-four children, which, however, was far from adequate, and the committee looked forward to the time when it could deal with cases of rickets as they arose. At present the most urgent cases were admitted at the first opportunity; less urgent cases had to be kept waiting owing to lack of room, with the result that the children became worse and on admission were incurable. The committee, therefore, appealed most urgently for funds to build, equip, and endow an additional ward to accommodate at least twelve children; their greatest need was more annual subscribers.

India.

Organization of Medical Research in India.

IN an article on the organization of medical research in India, published in the *British Medical Journal* of December 1st, 1928 (p. 1001), some account was given of the findings and recommendations of the committee which went out to India in the winter of 1927–28, with Sir Walter Fletcher as chairman, to study this problem. After considering the matter in all its bearings, the Fletcher Committee found at Dehra Dun an appropriate site for the Central Medical Research Institute. It is understood that a number of copies of the Fletcher Committee's Report were printed more than a year ago by order of the Government of India, but this document has not yet been issued for general circulation. The All-India Conference of Research Workers passed a resolution last winter urging the Government to publish the report forthwith, and a further indication of the growing demand for its publication is given in a printed communication lately received from the Bombay Medical Union. This consists of a long letter, dated May 16th, addressed by Dr. G. V. Deshmukh, President of the Union, to the Secretary of the Department of Education, Health, and Lands of the Government of India. The letter expresses regret "that though the Fletcher Committee signed their report in March, 1928, and that though the All-India Medical Congress held at Calcutta urged the circulation of this report last December, and that though my committee submitted a similar request last January, Government have not yet published this report and the evidence collected by the Fletcher Committee. Such an attitude on the part of the Government can only serve to increase the suspicion which the independent medical profession is driven to entertain as to the reasons why the medical advisers of Government are pressing for locating the Central Medical Research Institute at Dehra Dun and rushing this plan through."

Extension of Bombay Hospitals.

At the end of 1925 a Hospital Fund for Bombay was inaugurated under the presidency of Sir Leslie Wilson, with a view to supplementing the hospital accommodation in this city by 2,000 beds, and then to continue on the lines of King Edward's Hospital Fund for London. The annual report of this Fund for 1928 contains information about the active work that is being done in connexion with enlarging some of the existing hospitals. Thus, it is proposed to rebuild the Cowasjee Jehangir Ophthalmic Hospital, bringing its accommodation up to 100 beds. A gift from the trustees of the Sir Sassoon David Charity Trust will result in the provision of beds for Jewish patients in a special pavilion of the Jamsetji Jeejibhoy Hospital. A new hospital for children has been erected, this being the first new institution completed under the auspices of the Fund. The extension of certain other hospitals is under consideration, and the Fund is meeting half the cost of constructing a ward of 16 beds for venereal patients at the King Edward Memorial Hospital. On March 19th the Governor of Bombay laid the foundation stone of an extension to the Bai Yamunabai L. Nair Hospital, which is situated in a very thickly populated part of Bombay. The Governor in his speech, commented on the growth of this hospital and of the medical college attached to it, and expressed regret that it had been found impossible for

the Government to co-operate financially, owing to the heavy pressure of other commitments. This hospital was opened in May, 1925, and has about seventy beds. The numbers of both out-patients and in-patients are increasing rapidly, and the institution has recently been approved by the Bombay Presidency Nursing Association for the training of probationer nurses.

Progress of Medical Treatment in Nepal.

A short but interesting account of the history of scientific medicine in the secluded kingdom of Nepal is contributed by Dr. Indra Man, assistant surgeon to the Bir Hospital, Katmandu, Nepal, to the April issue of the *Indian Medical Record*; he traces its beginning to the period of the Indian Mutiny, when the Maharaja Jung Bahadur appointed a Dr. Khetra Mohan Mukherji as his palace physician. From the biography of this officer it appears that in those days the Maharaja made use also of the services of the English surgeon attached to the British Residency, but no public medical institution existed for the indigent and needy. The Maharaja's nephew, Bir Shum Sher, similarly employed the services of a family physician, and was the first to establish a hospital in Nepal—namely, the Bir Hospital at the capital, Katmandu, which comprised two separate buildings for the two sexes. Later another public hospital was opened at Birganj, a frontier town. More rapid progress followed in the provision of scientific medical assistance with the coming into power of the present prime minister, the Maharaja Chandra Shum Sher, who established the Sri B. Chandra Loke Hospital at Bhadgaon, a large town six miles from the capital. He next provided a hospital at Bhimphedi, and later decreed that there should be one hospital in each district, so that there are now more than two dozen hospitals in operation in the kingdom. The prime minister has recently caused a military hospital to be constructed; in the current year he is arranging for the establishment of a dispensary at Patan, and a leper asylum at Firping, under a Bengali medical practitioner trained at the State expense in the Calcutta School of Tropical Medicine. The prime minister has also arranged for several Nepalese youths to receive a full course of medical education in British India, so that the staffing of these institutions may be secured. The Bir Hospital under his regime has been enlarged and its trained staff has been increased. Dr. Indra Man comments on the very considerable change with regard to scientific medical treatment which has occurred among the very conservative Nepalese in the course of the last fifty years. They were at first highly suspicious, and avoided the hospitals, but they are now responding to the commendable encouragement given by the Government and are coming freely for treatment. Education is being improved and knowledge about public health is spreading; one of the latest steps to be taken is the allocation of a sum of money for the construction of a sanatorium for tuberculosis.

Medical Journalism in South India.

As previously mentioned in these columns, the monthly medical journal known as *The Antiseptic* recently completed twenty-five years of existence, having been founded by Dr. U. Rama Rau, with the late Dr. T. M. Nair as its first editor. Dr. Nair continued as editor until his death in 1919. The April issue of this periodical takes the form of a silver jubilee number, and Dr. U. Rama Rau, the present editor, contributes an account of its history, with especial reference to the interest that has been taken in the welfare of assistant medical officers. At its inception there was no considerable scientific medical journal in South India, and, consequently, it carried a heavy load of responsibility as regards the publication of medical research and the championing of various causes; one of the first of these was a defence of vaccination against an attack based on a case of death due to the subsequent infection by tetanus of a vaccination wound. Other matters of public interest with which *The Antiseptic* has concerned itself are: medical education in India and the establishment of a register; sanitary conditions in large towns; hospital abuse; and various medical problems in the Madras Presidency. The silver jubilee issue contains messages of congratulation from prominent medical practitioners in Great Britain as well as in India.

Correspondence.

X-RAY TREATMENT OF EXOPHTHALMIC GOITRE.

SIR,—To those who lightly skim through the *Journal* the argument of Dr. Charles S. D. Don (June 22nd, p. 1108) in his attempt to evaluate statistically *x*-ray treatment and operation in exophthalmic goitre may appear convincing. To those, however, who read between the lines I am afraid that some of the abuses as well as the uses of statistics are illustrated: for his material is limited to twenty-five cases of each series, all the factors are not given or analysed, and his results are not compared critically with those of others in the same field.

Thus the patients for whom operation was considered were put to bed, and iodine was administered till the basal metabolic rate had come down to about +30 per cent. If after three weeks the rate remained above 30 per cent. the case was regarded as inoperable. Are we to infer that *x*-ray treatment was tried in these rejected cases?

If the *x*-ray series of cases (whether their severity was equivalent to that of the operable or not) were treated as *out*-patients, and without the advantage of iodine administration (no data are given on these points), these factors alone would render them not truly comparable with the operated on series; but in addition, compared with the doses advocated by most radiologists, too small *x*-ray doses appear to have been given. "A quarter of an erythema dose" is considered by some to be a "stimulation" dose: in any case, however useful such a dose may prove at the beginning of treatment where often-repeated doses may be given, it seems an inadequate dose for the later widely spaced treatments. Further, in Dr. Don's data we are not told if the *x* rays were applied only from the front in one area, or if from each side; nor are we told if the thymus was irradiated as well as the thyroid, though this is of considerable importance.

Dr. Don says that "little has been published in this country on *x*-ray therapy," but A. E. Barclay[1] has shown in 300 private cases lately about 90 per cent. success, and I[2] have shown out of 107 cases an 82 per cent. success with *x*-ray treatment. Barclay's dose was a third of an erythema dose from each side of the neck, including the thymus area, given twice a week at first, later weekly, and at longer intervals. (Filter 2 mm. Al.) The dosage I had used was "one-half to two-thirds of the dose which will produce an erythema on the sensitive skin of the exophthalmic patient." If the Sabouraud pastille be used this is one-half to two-thirds of a pastille with 1 mm. Al filter, 120 or more kv.; or with 3 mm. Al one to one and one-third of a pastille. With the Holzknecht scale (as given by Lenk) this is from 2½ to 5 H.

It is convenient to group patients into several grades as regards chronicity, mildness, size and hardness of the thyroid, and whether other conditions are satisfactory, and to treat accordingly. Patients here, more than with many other disabilities, need to be individualized; and routine treatments will meet with only a small measure of success. If adequate *x*-ray dosage be given, *x*-ray treatment gives results second to none.—I am, etc.,

London, W.1, June 22nd. J. H. DOUGLAS WEBSTER.

TUBERCULOUS ADENITIS.

SIR,—I was much interested in Mr. Gordon Bruce's article on enlarged cervical glands in the *Journal* of June 8th (p. 1030), as during my service as civil surgeon in the Punjab I had a great deal of clinical experience in this subject. I can now only state from memory, but during the last four years I was in Amritsar I performed at least 400 operations for this condition.

This disease is very common in the Punjab; not only does one get cervical adenitis, generally of both sides, but also tuberculous axillary and inguinal glands. Tuberculosis of all kinds is very prevalent in the Punjab, but whereas surgical tuberculosis is found both in villagers and town-dwellers, tuberculosis of the lungs is confined entirely to

[1] A. E. Barclay and F. M. Fellows: *Lancet*, March 20th, 1926, p. 593.
[2] J. H. Douglas Webster: *British Medical Journal*, June 12th, 1926, p. 985.

the dwellers of the crowded and insanitary towns, and in my experience is invariably fatal. Surgical tuberculosis, however, especially among the villagers, is quite amenable to active treatment, and of these conditions the treatment of tuberculous adenitis by excision is eminently satisfactory—in fact, it is the only treatment worth considering. The results, even in very extensive disease—and the cases one gets are often far advanced—are excellent. Of course, one cannot follow them up in India as Mr. Bruce can in this country, but the immediate results are good. I certainly think that patients would not come to one for treatment if the permanent results were not also good: for the Punjabi peasant is no fool, and although he has not much faith in European medicine he appreciates to the full the benefits of surgery.

I can only remember two fatal results during my service. One was from delayed chloroform poisoning in a girl of 6, who had both sides of the neck extensively involved. I was tempted to do both sides at one sitting, and she died of delayed chloroform poisoning two days later. The other case—one of my earlier ones, which was due perhaps to inexperience—happened in 1908. This patient was a fine young Punjabi Mohammedan, the son of a leading man in the district, who had enormous masses of glands on both sides of the neck. I excised those on the right side successfully, and he returned in good health two months afterwards to have the other side operated on. I had nearly finished when I discovered a few glands left deep down in the subclavicular triangle. I was pulling on what I thought was an adhesion when there was a gush of venous blood, and I found that I had torn one of the communicating veins from the internal jugular. Eventually I had to tie the jugular in two places. The wound healed satisfactorily, but the patient returned two months later with advanced tuberculosis of the lungs, from which he died. I have no doubt that owing to this unfortunate accident a systemic infection took place. After this I never cut through any adhesion without first clamping it.

I have never done any injury to the nerves, and can confirm Mr. Bruce's opinion that the mass of glands around the spinal accessory should be split up. Also in all extensive cases the borders of the sterno-mastoid should be carefully defined before the deep dissection is proceeded with; this muscle forms a valuable landmark, and should never be injured. The most useful instrument for dissecting out the glands is a pair of blunt-pointed scissors curved on the flat; I never used the knife for this purpose, but removed the glands by a combination of leverage and snipping with the scissors. I learnt this originally from that great surgeon the late Mr. Jacobson, who taught me how to do the operation. His well-known dictum was to treat all tuberculous disease as malignant, and to remove it whenever possible.

A drainage tube should always be inserted for the first two days, as there is generally considerable oozing, specially when the adhesions are extensive. If this is not done healing will be delayed and suppuration may take place. It is unwise to use any of the various forms of gland forceps: they very rarely hold properly, and in most cases lead to rupture of a caseating gland and infection of the wound.—I am, etc.,

H. C. KEATES, M.D., B.S.Lond.,
Streatham Park, S.W., June 17th. Lieut.-Colonel I.M.S.(ret.).

CLASSIFICATION OF RHEUMATIC DISEASES.

SIR,—The letter by Dr. M. B. Ray, criticizing Dr. A. H. Douthwaite's nomenclature of these conditions, is really rather amusing, and shows the utter fog there is on the subject, for if Dr. Ray cannot follow Dr. Douthwaite I am sure Dr. Douthwaite cannot follow Dr. Ray.

At the discussion on chronic arthritis at the Royal Society of Medicine in November, 1923, and on other occasions, I have urged that the term "rheumatoid arthritis" be scrapped, for the following reasons:

1. It is used by some clinicians to include all forms of chronic arthritis, and not only arthritis, but fibrositis and such conditions as hallux rigidus and bunion.
2. It is used by others to signify all forms of infective periarthritis.
3. The general public have got hold of the term, which they associate with an incurable disease. How frequently one is asked in one's consulting room, "Have I got rheumatoid arthritis?" and patients are very much depressed if they are told they are suffering from rheumatoid disease when they are suffering from fibrositis or chronic villous arthritis—that is, climacteric arthritis.

The term "rheumatoid" must go. Let us carry on with the nomenclature of the Ministry of Pensions. Group C, Chronic Joint Changes, consists of four subgroups: No. 6, rheumatoid arthritis (infective periarthritis); No. 7, osteo-arthritis; No. 8, gout; No. 9, chronic joint changes unclassified. With these four subgroups one may have as many subdivisions as one likes—for instance, under No. 6, a subdivision for spondylosis rhizomelique, another for Still's disease, and yet a third for atrophic arthritis. Under No. 7, osteo-arthritis, one may have a subdivision for spondylitis deformans, and another for malum coxae senilis, and so on.

I have referred to atrophic arthritis. I believe that there is a special entity confined, as Strangeways also pointed out, to the female sex. It attacks young women at the commencement of the reproductive period. This is the type of case referred to by Dr. J. A. Glover and quoted by Dr. Ray, and I am glad to see that Dr. Douthwaite recognizes this variety also as distinct from infective arthritis, which is so commonly called rheumatoid. These cases are limited in number, and only represent about 9.6 per cent. of what is commonly called the rheumatoid group (infective arthritis and chronic villous arthritis). Chronic villous arthritis (or climacteric arthritis) I recognize as still another variety, which if not treated may tend to become osteo-arthritis, but never what is commonly called "rheumatoid." I am convinced that confusion in the nomenclature will continue until we get rid of the term "rheumatoid."—I am, etc.,

Harrogate, June 18th. G. L. KERR PRINGLE.

IMMUNIZATION BY TUBERCULIN.

SIR,—The great interest of the medical profession in tuberculin immunization is shown by the large number of letters I receive on the subject.

A full description of my method was published in the *British Medical Journal* of April 23rd, 1921, and I have nothing new to add to it. Metchnikoff wrote, in 1903: "In all the bacteriological institutes and laboratories search is being made for some vaccine or serum which will arrest a disease that in many cases Nature herself cures. But the results amount practically to nothing." We have reluctantly to admit that we are in much the same position to-day. In my judgement we should concentrate our activities more on the prevention of tuberculosis, and this can be accomplished by producing some active immunity in children who are associated with cases of open tuberculosis.

The method adopted by Calmette is scientifically sound, but it is open to objection on account of the possibility of reactivation of the living attenuated bovine bacilli in the body of a young child. Moreover, it is proved that immunity can be produced by dead bacilli, as is shown by the work of Petroff and others in the *Journal of Immunology* for March, 1929. The brilliant work of Sir Almroth Wright has given to the world an antityphoid vaccine which is prepared from dead bacilli of low virulence.

I would like to suggest to all tuberculosis officers and others engaged in this work the advisability of immunizing all children who are in association with cases of pulmonary tuberculosis. Two injections only are necessary, the proceeding is perfectly safe, and I have never observed any untoward symptoms. After a long experience, I am convinced that this is our best method of protecting the future generations of children against this deadly disease.—I am, etc.,

London, June 22nd. NATHAN RAW.

GAS-OXYGEN ANAESTHESIA.

SIR,—In your issue of June 15th (p. 1099) appears a letter from Mr. E. J. Chambers of Doncaster. It would be of interest to know the form of gas-oxygen apparatus he uses. It would seem strange, if the apparatus devised by Mr. Boyle had done so much harm, that it should still be used and taught in the leading teaching hospitals in

London. Further, Mr. Chambers states that to call it a gas-oxygen apparatus is a misnomer, as it is really an ether apparatus for use in conjunction with gas.

I have always understood that the very foundation principles of the apparatus were that it should be used for gas and oxygen, and the ether employed merely as an occasional accessory anaesthetic when, and if, necessary. I submit that when patients have had gas-oxygen anaesthesia administered by means of Boyle's apparatus, combined with so little accessory ether as to be conscious when leaving the theatre, those patients can be described for all practical purposes to have had a gas-oxygen anaesthetic.

I entirely agree with Mr. Chambers in his plea for the more generalized use of gas-oxygen anaesthesia, not only for the comfort of the patient in obviating post-anaesthetic vomiting, but also in those cases where the inhibition of other anaesthetics would probably tend to retard recovery. It is hard to agree, however, with his suggestion that gas and oxygen should be used for all cases of surgical work, and for all types of patient. Surely the old maxim, "Routine anaesthesia is bad anaesthesia," is as true now as ever.

In conclusion, I venture to suggest that the best results from the use of Boyle's apparatus can only be attained by the following: (1) careful selection of cases; (2) the greatest care in maintaining the perfect working order of apparatus; (3) meticulous attention to detail in administration.—I am, etc.,

London, W.1, June 18th. T. DE LACY WALKER.

MEDICAL ATTENDANCE ON PATIENTS IN PRIVATE WARDS.

SIR,—Will you kindly afford me space in which to describe what my Division considers to be a retrograde step in the Hospital Policy of the British Medical Association, on the treatment of private patients in private wards of hospitals. It should be remembered that these patients will be required to pay the full cost of maintenance, with medical, surgical, and specialist fees in addition. Hitherto the policy of the Association has granted to these people complete freedom of choice of medical attendant. The new policy deprives them of this right, and compels them to be under the care of the visiting staff of the hospital. In other words, the patient pays the piper and the hospital calls the tune.

The old procedure preserved the ordinary relationship of family practitioner to consultant, a relationship which is the result of long experience, and is in the best interests of the patient and the profession. The practitioner attended his own patient and was able to suggest the consultant best suited to the condition. The prestige of the practitioner was maintained and the confidence of his patient preserved. This is the present policy of the Association, and the proposed change involves the complete inversion of this relationship.

It is now suggested that the patient shall be under the "responsible care" of a member of the visiting staff. The private doctor of the patient is relegated to a very inferior position where he "should have such share of responsibility and treatment of the patient as may be agreed upon." A very slight acquaintance with the psychology of the honorary, resident, and nursing staffs of hospitals will enable one to appreciate that such a condition of things is impossible. In actual practice the family practitioner will be "frozen out," and his position and prestige in the eyes of his patient will be seriously damaged. We cannot imagine that any self-respecting family practitioner would tolerate being placed in such an invidious position.

We are faced with the two conflicting interests: the interest of the family practitioner in his patient, and the interest of the consultant in the work of the hospital. The present policy preserves that of the family doctor primarily, while the proposed new policy preserves that of the hospital consultant primarily. In Sunderland we have settled this problem by a compromise on lines which will preserve the interests of both. We have opened private wards in which patients are allowed to be under the responsible care of their own family doctor. If, however, any consultant is required, or any special work is to be done, the family doctor must call in a member of the visiting staff. This preserves the old relation of family doctor and consultant, maintains the prestige of the doctor in the eyes of his patient, and secures for the visiting staff their interest in the work of the hospital. We maintain that it is only along the lines of preserving the normal relationship of family practitioner to consultant that any co-operation is possible.

In order that the profession may have an opportunity for expressing its opinion on this question, this Division has put the following amendment on the agenda for the Annual Representative Meeting.

> "That the suggested new para. 29 (*a*) be deleted and the following paragraph be inserted:
> "(*a*) if the hospital has a resident medical officer or officers, and also a visiting staff which is ordinarily responsible for the care of all the patients in the public wards, the patient should be allowed to select any available registered medical practitioner as his attendant, but, if the treatment of the patient at any time involves the application of special skill or experience, then the practitioner undertaking the treatment should be a member of the visiting staff of the hospital."

The object of this letter is to stimulate a little interest in the subject, and to give representatives time to think the matter over before the meeting.—I am, etc.,

Sunderland, June 17th. R. H. DIX, Honorary Secretary, Sunderland Division.

A COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS.

SIR,—A great deal has been heard lately on the subject of a College of Obstetricians and Gynaecologists. The main argument advanced for this innovation is that the present standard of teaching and practice in obstetrics and gynaecology requires raising.

Surely this can equally well be achieved by (1) the granting of a diploma for obstetrics, (2) having a special examination for a fellowship in gynaecology, and (3) having a permanent representative of obstetrics and gynaecology on the committee of management of the Conjoint Board.

Although specialization is a necessity in the various branches of surgery, it is difficult to see why it should be necessary to have separate colleges. If we have a college for gynaecology, why not one for proctology, urology, etc.? Personally, I am quite content to be a surgeon.—I am, etc.,

London, W.1, June 18th. MALCOLM DONALDSON.

SPA TREATMENT.

SIR,—In to-day's issue of the *Journal* Dr. Geoffrey Holmes reverts to the question of a definition of spa treatment.

The definition which was proposed at the Annual Representative Meeting at Cardiff was not accepted. It certainly only approximates, as Dr. Geoffrey Holmes states, to the definition which he quotes, as it contains the following important addendum, which was not in the definition proposed by Dr. Dain. "However great the importance of auxiliary treatments may be, drinking and bathing in fresh natural mineral waters form the basis of all genuine spa treatment." Considerable alterations have now been made in the draft, but the definition which is put forward for consideration appears to be cumbersome and unlikely to meet with general approval.

What is the necessity at the present time for a definition of forms of treatment which are difficult to define when the word "spa" is attached to them? The only reason mentioned in the letter of Dr. Geoffrey Holmes appears to be in connexion with the proposed spa treatment for insured persons. If this is the reason, it is pertinent to inquire, if definite arrangements are made for spa treatment for insured persons, whether such treatments will only be recognized at places agreed upon by the Spa Practitioners Group of the British Medical Association and the insurance societies. If so, I consider that in the present state of our knowledge of "natural waters of

distinctive therapeutic value" the decision would be unfortunate. It is admitted that "all water properly applied has therapeutic value"; but how, in a definition such as is now proposed, can a final distinction be made between waters which have "a therapeutic value" and those having "distinctive therapeutic value"?

Does the statement "drinking and bathing in such fresh natural waters form the basis of all genuine spa treatment" mean that it is necessary both to drink natural water and to bathe in the natural water in order to have spa treatment; if so, what is the position of a recognized spa which does not possess a natural mineral drinking water? Further, has the time come for the insertion of the word "genuine" into a medical definition?

The various schemes which have been under consideration for spa treatment for insured persons deal mainly with rheumatic conditions. Evidence in reference thereto was given before the Royal Commission of National Health Insurance in 1925, and in a "Note on the treatment of chronic rheumatism in insured persons" attached to the evidence given on July 14th, 1925, it is concluded that three-tenths of sufferers from chronic rheumatism would be benefited by medicinal waters in a spa hospital, whereas the other seven-tenths would not require medicinal waters, but could best be treated by external methods in clinics. Even if this is in the main accurate, and I think it is, these external methods consist of baths, douches, packs, electricity, light, heat, massage, and exercises, which comprise a large percentage of all spa treatments, and are available at many places, other than a recognized spa.

Spa treatments comprise the drinking of water and its use for baths and douches, along with physical treatments, diet, and environment, which includes climate, air, amusement, and social amenities. It is only the use of its natural water for drinking, baths, and douches, and its climate, that are peculiar to a spa; but excluding the use of its natural water for drinking, there is no definite evidence to prove that the external use of its natural water for baths and douches is in any way specific for the treatment of chronic rheumatism, and it has been pointed out that the claims made by all British spas are extremely alike, similar conditions being treated with very dissimilar waters with apparently equal benefit. No one with experience of spa treatments will cavil at the statement that they are probably the most beneficial methods of treatment in chronic rheumatic diseases. As all these spa treatments, except the natural mineral water, which is only apparently required in three-tenths of the cases, are available at many places, it is, I consider, detrimental to progress to circumscribe the term "spa treatment" with a contentious definition.—I am, etc.,

Torquay, June 22nd. K. R. COLLIS HALLOWES.

DR. C. POWELL WHITE: AN APPEAL.

SIR,—We are writing to appeal for funds on behalf of Dr. Charles Powell White, who, as the result of a severe cerebral haemorrhage, is unable to maintain himself, his wife, and family. This position is largely due to the fact that he has devoted his life to cancer research for the benefit of the general public and the world at large. By his writings and works he has obtained an international reputation as an authority on cancer problems.

For many years he has given all his time to cancer research in Manchester for the Christie Hospital for Cancer, the Pilkington Cancer Research Fund, the University of Manchester, and the Manchester Committee on Cancer. In each of these appointments he has received only a nominal salary for a man of his eminence, and not being on the teaching staff of a university he is not eligible for any pension. Possessing the highest medical and surgical qualifications, he could have commanded a much more lucrative position in the active practice of his profession, but he preferred to use his wide knowledge of mathematics, chemistry, physics, and general natural sciences for the study of cancer, its treatment and prevention.

Dr. Powell White's work has a soundness of character and a breadth of application still only incompletely recognized. Thus it is to him that we owe the present classification of tumours—a classification which has been very widely adopted by pathologists. His other work is less generally known, since it is more mathematical and abstruse, but from it emerges the fact that certain analyses suggest that in persons suffering from malignant disease changes occur which show that some fundamental metabolic disturbance is present in this condition, and that these changes are greater than can be accounted for by the growth itself. He possesses a grip of the problem of malignant disease shared by few.

Dr. White has conducted long and tedious analyses on cancer problems which would have daunted many by their extent and difficulty, and it was in his laboratory that he was taken ill. He has a world-wide reputation as an authority on cancer, and has communicated articles on the subject to your columns. We hope that many of your readers to whom we cannot send the special letter of appeal will be able to contribute towards the fund. Subscriptions should be sent to Mr. Wilson Hey, 16, St. John Street, Manchester.—We are, etc.,

WALTER H. MOBERLY,
Vice-Chancellor, University of Manchester.
FREDERICK P. NATHAN,
Chairman, Christie Pavilion and Home.
R. VEITCH CLARK,
Chairman, Manchester Committee on Cancer.

Manchester, June 19th.

MENTAL HYGIENE.

SIR,—I was glad to see in this week's *Journal* (p. 1140) the earnest appeal by Sir Maurice Craig to the public health authorities to provide facilities for psychological treatment for the poorer classes. His letter receives additional emphasis from the striking report of the success of the Cassel Hospital, Swaylands, which is epitomized in the same issue (p. 1133). Also, on page 1131 there is a review of Dr. Newsholme's iconoclastic book on health, disease, and integration. The coincidence of these three items encourages me in the hope that we are at last on the eve of doing something to stop up this leak, which is draining the vital forces of the community.—I am, etc.,

Birmingham, June 23rd. R. MACDONALD LADELL.

PUERPERAL SEPSIS.

SIR,—Dr. Colin Craig's letter on puerperal sepsis (June 8th, p. 1057) should be of considerable service. That puerperal sepsis is produced from within I am fully convinced, as this offers the only explanation for a large number of cases that are seen in general practice. Although I have given up midwifery practice for a number of years, I was struck, as Dr. Craig has been, by the number of cases of puerperal sepsis I met with for which I could not find a satisfactory explanation.

In this connexion I undertook the task of examining over 300 urines of females—chemically, microscopically, and bacteriologically. I submitted the result to a meeting of the Edinburgh Obstetrical Society, and it was published in the society's *Transactions* in 1906. As it substantiates Dr. Craig's contention, it might be of interest if I briefly summarize my findings.

1. Out of every four urines examined, one contained pus and bacteria.

2. The bacteria found were *Bacillus coli*, staphylococci, streptococci, gonococci, pseudo-diphtheritic bacilli, and other rod-shaped bacilli which, at the time, I could not place.

3. Pyuria in its mildest form should be regarded as a septic condition.

4. Leucorrhoea existing with a pyuria should be regarded as a septic condition.

5. The urine of all pregnant women should be as carefully examined for pus as for albumin, as a puerperal fever may be caused by infection from the urethra.

6. The presence of the colon bacillus in so many urines and in vaginal discharges makes the probability almost a certainty that infection was from the anus.

There are other cases, however, to which I referred, that might be infected directly through the blood stream, as Dr.

Craig suggests. Dr. John Campbell of Belfast had a most interesting article in the *British Medical Journal* of September 23rd, 1905, entitled "The influence of the presence of pus in the female urethra on the progress of gynaecological and obstetrical cases," and this has a direct bearing on Dr. Craig's observations.

The articles I have mentioned appear as ancient history, but it is surprising that puerperal sepsis, as Dr. Craig points out, is still regarded as due to the sins of the general practitioner. What apparently is required is a bureau for assorting and assessing the numerous investigations that have been carried out, at considerable labour, for the furtherance of knowledge, and which are allowed to sink into oblivion.—I am, etc.,

Edinburgh, June 13th. FREDERICK PORTER.

PRURITUS ANI.

SIR,—The frequency of pruritus ani and the ease with which it is benefited by appropriate treatment makes me doubt if the causation is so obscure, or the treatment necessarily so drastic, as that suggested in Mr. Gabriel's valuable paper (June 15th, p. 1070). The doubt already assailed me twenty to twenty-five years ago, when, as a frequent visitor to St. Mark's Hospital, I heard these theories and noted the effects of treatment there. The common feature in all cases is a perianal dermatitis, and the cause, I believe, a soiling of the perianal skin after defaecation by imperfect toilet methods. Detailed attention to this factor will nearly always give relief, and at the request of medical sufferers, who had been so relieved, I published a note thereon in the *Journal* a few years ago. The anal fissure also usually yields readily to simple treatment, but confessedly I have not a wide experience of chronic cases.—I am, etc.,

Paignton, June 15th. ERNEST WARD.

Obituary.

DR. ERNEST MORTON WYCHE died on June 13th at his residence in Nottingham in his sixtieth year, after a very brief illness. He was educated at Oundle School and the London Hospital, and obtained the M.R.C.S. and L.R.C.P. diplomas in 1893. After holding various appointments, he took the D.P.H.Lond. in 1898. For eighteen months he served as surgeon on a cable-laying ship, and then went into general practice in Cambridgeshire. On the inception of the school medical service in 1908 he was appointed to South Essex, where he had to do pioneer work in a large rural area. In August, 1914, he was appointed senior school medical officer to the city of Nottingham. The service was still in its infancy, and Dr. Wyche devoted himself to extension of the work as rapidly as the difficulties of the war allowed. Careful not to encroach on the work of the general practitioner and the hospitals, he attempted to supply those forms of treatment which were otherwise difficult to secure. The expansion of the service after the war soon brought about the necessity for a bigger central clinic, and he was instructed to work with the city architect in adapting a large building to his needs. The new clinic was opened in November, 1926, and is a lasting testimony to his foresight and ingenuity. He was justly proud of the tonsil and adenoid theatre and wards, and of the dental department. He followed closely scientific research on the health of young people, and he was always to the forefront in securing for the children of Nottingham the benefits of new advances. A keen enthusiast on the importance of fresh air, he was instrumental in establishing one of the finest open-air schools in the country. He was quick to realize the value of ultra-violet therapy for the ailing child, and his committee was one of the first to install this treatment. His detailed organizing ability applied to every aspect of school medical work was especially shown in his scheme for the ascertainment of mentally defective and dull and backward children. A man who avoided personal publicity, he was loved by all who came in contact with him, from the youngest of his patients to the highest officials in the town. The members of his staff feel his death most keenly. They have lost not only a respected chief, but also a sympathetic friend. He leaves a widow, a son, and a daughter.

DR. THOMAS SIMMONS MORLEY died at Mill Hill on June 20th, at the age of 76. He was just beginning to get about after a long illness involving a series of operations, when infection suddenly lighted up in the kidneys, and he rapidly succumbed. He received his medical education at Guy's Hospital, taking the M.B. degree of London University and the M.R.C.S.Eng. diploma in 1874, and proceeding M.D. in 1878. After holding the appointments of obstetric resident at Guy's, and clinical assistant at Great Ormond Street, he joined his father in a practice at Barton-on-Humber, which the latter had established in 1837. In 1886, when his father died, Dr. Thomas Morley was left in sole charge of this extensive town and country practice. He was Poor Law medical officer, public vaccinator, and surgeon to the Admiralty, but he relinquished the former duties many years ago owing to the pressure of work. The difficulties and trials of a country practice, particularly in the days before the advent of the motor car, are only known to those who have experienced them, and he had little leisure. Nevertheless he kept wonderfully up to date, and his spare time was given to medical and general reading. He was a member of the Barton Urban District Council for some years, and had held office as president of the East Yorks and North Lincs Branch of the British Medical Association, of which he was always an active member. By early training and lifelong conviction he was an ardent lover of civil and religious liberty, and served with great diligence the Church, with which he had been united in early life. He was an enthusiastic Liberal of the Gladstonian school, and was a well-known figure on the political platforms of that period. In the latter years of his work Dr. Thomas Morley was assisted by his sons, but owing to the war he was again single-handed, and when the influenza epidemic of 1918 broke out he worked day and night without falling a victim to this disease, which had nearly killed him in 1890. He retired at the end of 1921, and went to live at Bournemouth, but continued to take a great interest in the activities of the Association and in modern advances in the science to which his life had been devoted. He is survived by a widow, and three sons who are all engaged in the practice of medicine.

DR. BEPIN BEHARI GHOSH, who died on May 23rd, after a short illness, at the age of 72, was one of the oldest members of the British Medical Association in Calcutta. After a brilliant career at the Calcutta Medical College, he entered the service of the Government of India as an assistant surgeon, but after a little while relinquished his post to establish himself in private practice. During the latter years of his life he occupied a prominent position in Calcutta as consulting physician, and was vice-president of the Calcutta Medical Club. A conscientious public servant, he founded an English school in Antpur, his native village, was a trustee of the Shambazar A.V. School, and a member of the executive committee of the Calcutta Orphanage and of the district charitable society.

The death occurred on June 12th, at New Galloway, after a long illness, of JOHN COWAN, M.B., C.M., a well-known figure in the public life of the Stewartry of Kirkcudbright. Dr. Cowan had been provost of the royal burgh of New Galloway for nearly thirty years, and had figured prominently in county administrative bodies for nearly forty years, being a member of the committee of the licensing court, and a justice of the peace for the county. As medical practitioner for the Glenkens he was widely known and highly esteemed. He was also prominently identified with Masonic activities, and was right worshipful master of the local lodge for many years. He was in his sixty-fourth year, and is survived by Mrs. Cowan and one son, Dr. J. G. Cowan, who was associated with his father in the practice.

We much regret to record the tragic death of Miss Barbara Edith May Morris, as the result of a shooting accident, at the early age of 33 years. She was the daughter of Mr. E. W. Morris, C.B.E., house governor of the London Hospital, and received her medical education at St. Mary's Hospital Medical School. She took the diplomas of the English Conjoint Board in 1927, but a breakdown in health prevented her from starting in practice, and she was convalescing at Bingham Park after a serious operation when the fatal accident occurred on June 17th.

The death occurred, on June 20th, of Dr. ARCHIBALD MACMILLAN, at his residence, Croft Park, Blantyre, Lanarkshire. Dr. Macmillan took the qualifications of L.R.C.P., L.R.C.S.Ed., L.R.F.P.S.Glas., with honours, in 1901, and the D.P.H.Camb. in 1913. He saw considerable war service, and had the distinction of O.B.E. conferred on him. At the conclusion of the war he took over the extensive practice in Blantyre formerly held by the late Dr. William Grant. Dr. Macmillan leaves a widow, one son, and two daughters.

The following well-known foreign medical practitioners have recently died: Professor HIROTA, the first occupant of the chair of paediatrics at the Imperial University of Tokyo, founder of the Japanese Paediatric Society, of which he was president for thirty-three years, and organizer of many maternal and child welfare foundations, aged 70; Professor FRANK KEIBEL, director of the Sicard Anatomical Institute, and professor of histology in Berlin University, aged 68; and Dr. SAMUEL S. ADAMS, an eminent paediatrist of Washington, aged 75.

The Services.

INDIAN MEDICAL SERVICE.

ANNUAL DINNER.

THE annual London dinner of the Indian Medical Service was held at the Trocadero Restaurant on June 19th, with Lieut.-Colonel D. G. Crawford in the chair. The guests were Dr. N. G. Horner, Editor of the *British Medical Journal*, and Dr. E. C. Morland of the *Lancet*.

THE CHAIRMAN, in proposing the toast of "The Indian Medical Service," welcomed several of the latest recruits to the service who had just finished their probationary course, and who would soon take up their duties in India. While few could hope to reach the success attained by such men as Sir John McNeill and Sir Joseph Fayrer in political and administrative work, or to write their names high on the scroll of fame, as great scientific discoverers, as two of his own contemporaries had done, he thought that the Indian Medical Service still offered a good career, with interesting work, fair pay, and a fair pension at the end. Most of those who, like himself, had passed the allotted span of man's life, would be glad to begin their careers over again. "If I had to live life over, I would live that life again." He also wished to welcome among them the representatives of the *British Medical Journal* and the *Lancet*. All the seniors, at least, in the service must know what the British Medical Association and the two great medical journals had done for the public medical services, not only for the I.M.S., but also for the R.A.M.C. and the medical department of the Navy. Whenever the medical services had been suffering from reasonable grievances, or had been in a tight place and had asked for help and support from the civil profession, the help and support required had been given fully, freely, and ungrudgingly by the Association, and by the two great medical journals.

It was now a little over three hundred years since the East India Company opened their first settlement in India, at Surat in 1609. Their factory had as staff a few senior officers, called merchants; a few juniors, starting as clerks, or, as they were then called, writers; also a chaplain and a chirurgeon. And the Indian Medical Service started, one strong! For defence they had a handful of Goanese peons. That small body of merchants and writers had grown into the great Civil Service of India, that half company of Goanese peons had expanded into the Indian army, the finest army in the world. And that Civil Service and that army, with the I.M.S. sharing in their work as a branch of the army, had built up the Indian Empire, and had given to India peace and prosperity in the place of anarchy and misery.

In 1763, just about halfway between the first beginning and the present time, the Indian Government organized their scattered medical officers, who by this time amounted to well over a hundred in number, into a graded service, with regular fixed ranks and pay: the Indian Medical Service, with its three establishments—Bengal, Madras, and Bombay. These medical officers were not commissioned officers; only the surgeon-general held a commission—the rest were warrant officers. Lord Cornwallis gave commissions to all medical officers, from the date of their appointment, in 1788. Eight years later, in 1796, furlough and pension were granted. Up to that year an officer who wished to go home had to resign the service, being allowed, as a rule, to resign, "with permission to return." The rates of furlough pay and pension granted in 1796 seemed nowadays absurdly small; but they were a great advance upon nothing at all.

Early in the history of the English in India the Company found it necessary to provide hospitals for their servants and other Europeans in the Presidency towns. Madras was the first, about 1664. Bombay followed suit, in 1670, and Calcutta in 1707. These hospitals, however, were for Europeans only, and practically for Government servants only, for the soldiers and sailors, who provided the majority of the patients, were all servants of Government. For the general public—for the Indian population—there was no medical provision at all. And when such provision was made it was chiefly due to members of the I.M.S. The first suggestion of a hospital for the Indian public seemed to have been made by Surgeon William Gordon of Madras, in 1787. There was no provision for the treatment of the Indian population in the *mofussil* before the nineteenth century. There were hospitals for the army—general hospitals at the headquarters of divisions and brigades, regimental hospitals in the smaller cantonments—where the soldiers received medical treatment fairly up to the standard of the time. But these hospitals were for soldiers only. The first native hospitals in the *mofussil* were opened about 1804, at Dakka, Patna, Benares, and Murshidabad. But most of the hospitals and dispensaries in civil stations were started in the thirties and forties of the last century; the majority owed their origin to the energy of individual civil surgeons, who gave their time, their skill, and their money to found hospitals in their stations, collected subscriptions and got grants of public money to maintain these hospitals, and also themselves trained the necessary assistants, native doctors and compounders. The Calcutta Medical College was founded in 1835, and opened in that year with eight young Hindus as first-year students. They must have been courageous youths, these eight. Not only was the handling of dead bodies, in dissection, clean against the principles of their caste, but what must have been the condition of the bodies provided for dissection!

Medicine, surgery, sanitation, medical education, medical research, might all be considered as regular professional duties—all in the day's work for a medical officer. Most of the work done in natural science in India has been done by members of the I.M.S. To mention only a few names—in botany, Roxburgh, Wallich, and, in our own days, King and Prain; in geology, Falconer; in zoology, Alcock. Even the natural sciences were, until the specialization of the last half-century, part of the regular work of medical men. But members of the I.M.S. had gone far beyond the limits of regular professional work, and had had a large part in organizing and developing these great auxiliary services which now shared in the administration of India. Alexander Gibson of Bombay and Hugh Cleghorn of Madras were two of the first conservators of forests. James Ranken and George Paton were among the first postmasters-general. And the electric telegraph was introduced into India, and put into working order, by Sir William O'Shaughnessy-Brooke of Calcutta. It was unlikely that the I.M.S. would ever again furnish the British Foreign Office with an ambassador, or that it would again provide a Governor for Bengal; but the path of scientific research remained open.

In proposing the toast of "The Chairman," Sir LEONARD ROGERS said he supposed that most of the senior officers, at any rate, were of the opinion that the chief glory of the Indian Medical Service lay in the past, so it was appropriate that their chairman should be the historian of the service. However, he himself was not one of the pessimists who thought there was no future for the I.M.S., and he wished to take this opportunity of pointing out that under the reorganization scheme sanctioned last year the I.M.S. had obtained most solid advantages, which placed it in a more favourable position than any other service in India. Thanks to the necessity of providing a military reserve, which could not be altered without the sanction of the British War Office, the I.M.S. was now guaranteed the all-essential framework of two-thirds British officers in both the military and civil departments, against a maximum of 50 per cent. in any other service. In saying this, the last thing he wished to do was to disparage in any way the Indian members of the I.M.S., for he maintained that they were also recruiting the pick of the younger Indian medical men, many of whom had taken British qualifications, and thus had had the opportunity to absorb something of the spirit of the British race and of British medicine. Moreover, the pay of junior officers was now just three times the old rate, and that, too, with the sterling value of the rupee nearly 50 per cent. over that of his early days in India, with the additional advantages of study leave, passages for officers and their families, and better conditions of work for the military side in well-equipped station hospitals, in the closest harmony with the officers of the R.A.M.C. Another concession of vital importance, the necessity for which he had urged before the Lovett Committee some years ago, was the right of retirement after six years' service, with a gratuity of £1,000, and after twelve years with £2,500, to enable any officer dissatisfied with his service prospects to buy a practice at home. This concession also allowed the popularity or otherwise of the service to be gauged. Out of about a score of officers who might have retired with the first bonus last year the only one who availed himself of the opportunity was a man who was allowed to take it as an act of grace; so these officers, who should best know where the shoe pinched, were clearly satisfied with their prospects. Turning to the civil side, the position last year was not so satisfactory in two respects, but thanks to the help of their old friends in the British Medical Association the Naval and Military Committee had once more come to their help, with the result that two all-important concessions would be announced in the *British Medical Journal* and in India in a few days' time.* After explaining the significance of these concessions, Sir Leonard Rogers turned to the subject of his toast, describing the chairman, Colonel Crawford, as "the erudite historian of our service, who devoted thirty years' labour among the dusty papers of the record departments in Calcutta and at the India Office to collecting the mass of facts regarding the early history of the medical services in India with which every one of the 1,064 pages of his monumental work bristles." When the service lost a great administrator it gained a unique historian, for Colonel Crawford had continued to devote many years of a well-earned rest to his studies on the history of the I.M.S.

The following is a list of the officers present at the dinner:

Major-Generals: A. A. Gibbs, K.H.P., G. F. A. Harris, C.S.I., A. Hooton, C.I.E., Sir Leonard Rogers, C.I.E., F.R.S.

Colonels: J. Anderson, C.I.E., R. F. Baird, C. M. Goodbody, C.I.E., D.S.O., T. A. Granger, C.M.G., C. R. M. Green, G. Hutcheson, J. J. Pratt, F. Wall, C.M.G., C. N. C. Wimberley, C.M.G.

Lieut.-Colonels: A. Alcock, C.I.E., F.R.S., W. G. P. Alpin, O.B.E., G. T. Birdwood, E. W. Bradfield, O.B.E., Harold E. Brown, J. T. Calvert, C.I.E., D. Coutts, J. M. Crawford, O.B.E., C. D. Dawes, C. H. Fielding, H. R. B. Gibson, T. H. Gloster, H. Greany, D. Heron, C.I.E., E. V. Hugo, C.M.G., Dalzell J. B. Hunter, O.B.E., J. W. Illius, R. S. Kennedy, D.S.O., M.C., H. H. King, J. Kirkpatrick, J. C. G. Kunhardt, Clayton A. Lane, W. B. Lane, C.I.E., C.B.E., G. Rigby Lynn, D.S.O., A. A. Macneight, F. O. N. Mell, C.I.E., A. Miller, T. R. Mulroney, J. H. Murray, C.I.E., B. E. M. Newland, E. S. Phipson, D.S.O., E. Rost, O.B.E., A. J. H. Russell, C.B.E., R. B. Seymour Sewell, W. S. Jagoe Shaw, N. S. Simpson, G. M. C. Smith, C.M.G., R. Steen, Ashton Street, W. A. Sykes, D.S.O., C. Thomson, G. Sloane Thomson, W. H. Thornhill, E. L. Ward, C.B.E., W. L. Watson, O.B.E., A. C. Younan.

Majors: T. J. Anderson, M.C., H. Chand, M.C., J. C. Chukerbuti, G. Covell, W. E. R. Dimond, Sir T. Carey Evans, M.C., A. H. Harty, L. M. R. Hennessey, W. P. Hogg, M.C., R. N. Kapadia, M.C., J. G. McCann, A. N. Palit, B. Prasad, W. C. Spackman, H. J. H. Symons, M.C.

Captains: J. H. Barret, Thaw Ba, A. T. Cox, T. J. Davidson, D. A. S. Hari, A. V. Lopes, D. P. McDonald, A. Rosenblom, A. N. Sharma, D. K. Thapar.

Lieutenants: H. J. Boultbee, T. W. H. Caughey, A. M. Fraser, F. T. Harrington, W. P. Lappin, P. Shannon, D. L. Trant, H. S. Waters.

* See Supplementary Report of Council, *Supplement*, p. 253.

DEATHS IN THE SERVICES.

Deputy Inspector-General Edward Julian Sharood, R.N. (ret.), died at Worthing on June 3rd, aged 90. He was educated at University College, London, taking the M.R.C.S. in 1860, and at Edinburgh University, where he graduated as M.D. in 1862. Entering the navy soon after, he attained the rank of fleet surgeon on June 16th, 1883, and retired with an honorary step of rank as D.I.G. on June 25th, 1893. He was in receipt of a Greenwich Hospital pension for good service.

First-class Assistant Surgeon Joseph Reginald Herbert Cabral, Indian Medical Department, was murdered by a Waziri fanatic at Bibizai, in Waziristan, on the North-West Frontier of India, on June 13th, along with another officer. Both were shot while travelling in a motor car. Cabral was born on May 9th, 1884, and entered the I.M.D. on March 31st, 1905, reaching his late rank in 1922. He served in South Persia during the great war.

Medico-Legal.

CHARGE OF PROFESSIONAL NEGLIGENCE.

SHEWRY *v.* MAYBURY.

BEFORE the Lord Chief Justice (Lord Hewart) and a special jury the hearing was begun on June 11th, and lasted seven days, of a case in which Leslie Shewry of Eastney, Portsmouth, an infant suing through his father, claimed damages against Dr. Lysander Maybury of Southsea for personal injuries owing to negligence in treatment, a charge which was denied.

Case for the Plaintiff.

Mr. Raynor Goddard, K.C., in opening the case, stated that when the boy Shewry was 14 days old, in August, 1920, Dr. Maybury, on the ground that he had congenital syphilis—from which, in fact, he had never suffered—injected into his head the arsenical preparation known as novarsenobillon. The fluid entered the tissues of the brain, destroying and injuring certain of them, so that the child was, and always would be, a hopeless idiot and epileptic. Dr. Maybury had attended at the birth of the child, and had attended the mother before that event. The injections were given at the surgery, and it was alleged that no blood test was made beforehand. Within an hour of the first injection the child had a fit. Four further injections were given on later dates up to September. Dr. Maybury never mentioned his suspicion of syphilis to the parents, and they believed that the injections had been given for an attack of jaundice from which the child had suffered. It was strongly denied that either of the parents had ever had syphilitic infection, and since the birth of this child, who was the first-born, they had had two perfectly healthy children.

Inspector Shewry of the Portsmouth police, the father of the child, testified to having paid more than £40 on account of Dr. Maybury's bill; the bills as presented amounted to about £142 altogether. Mrs. Shewry, in evidence, said that the doctor told her he would like to inject something to clear up the jaundice. He never inquired about her personal history or that of her family. The baby was not ill until the injections were given.

Dr. C. R. Crawford of Southsea said that he first saw the child in March, 1922, and thought the case to be one of epilepsy following injury to the brain. He would most certainly not feel justified in injecting "N.A.B." into the longitudinal sinus of an infant unless he had a positive result from the blood test. Nor did he think that a general practitioner would do the operation, which was one of great difficulty. Mr. Harold Burrows, F.R.C.S., until recently of Portsmouth, said that he had examined the child, and considered that the attempt to make such injections could have caused the injury. He would not agree that this was an ordinary case of idiocy due to some ante-natal cause, and he did not believe that Dr. Maybury ever saw in this child the stigmata of syphilis. Dr. W. B. Cosens of Chelsea said that from his recent examination of the child he had come to the conclusion that he was suffering from a condition which came on after birth. The operation performed in this case had now fallen into disrepute because of the possibility of a mistake being made. In his belief it was quite wrong to treat a child of 14 days with arsenic.

Case for the Defence.

Mr. Roland Oliver, K.C., instructed by Messrs. Hempsons for the defence, said that Dr. Maybury was being called to account for something he had done nine years previously. It was nonsense

to say that he had performed an operation known to be dangerous. The textbooks of that day had advocated injection into the sinus vein as the best, easiest, and safest way of introducing medicinal matter into a child's system. Dr. Maybury had performed the operation many times with perfect success. He would call a body of testimony to show that, as far as anyone could diagnose the case at all, it was one of ordinary congenital disease. The child, according to Dr. Maybury, was sickly from birth, feeble, constantly crying, developed "snuffles" and a characteristic rash, and had jaundice. For nearly a year after the injections the mother did not take the child to a doctor. The story of the convulsions had been antedated to implicate Dr. Maybury.

Dr. Maybury, who said that he was registered in 1879, bore out his counsel's statement, and added that previous to July, 1928, no one had accused him of treating the child improperly. In cross-examination, he admitted that an action for negligence was brought against him at Winchester assizes in 1925, and resulted in a verdict for the plaintiff, with £1,000 damages.[1] With regard to the present case, he admitted that his diagnosis of syphilis might have been wrong, but he saw signs of the disease, and had to treat it by the most approved method. He booked fees of five guineas for each injection, which he thought a fair charge. Asked about the effect on the brain should there be an accident in giving the injection, he said that some inflammation would be set up, but he did not think there would be destruction of brain tissue.

Evidence was given by Dr. W. F. Eberlie, now of Luton, who at the time was Dr. Maybury's assistant. He stated that cases of congenital syphilis in infants were frequently treated by Dr. Maybury by the injection of "N.A.B.," and he could not remember any case in which the injection was followed by fits or convulsions. It did not strike him that it was very early to operate on a child. Dr. R. C. MacPherson, medical superintendent of St. Mary's Hospital, Portsmouth, of which the child is an inmate, said that there was nothing to differentiate the case of Leslie Shewry, an imbecile, from scores of other cases. Since he first saw him, in May, 1926, his condition had become progressively worse. He had never seen or heard of a case in which these or similar results had been produced by an "N.A.B." injection. Dr. F. M. R. Walshe of Portland Place, a specialist in neurology, attributed the disease from which the child suffered to an imperfectly developed brain. To discover by percussion of the skull, as one of the expert witnesses said he had done, that the lesion in the child's brain was artificially produced and not congenital, was magic, not medicine. It was almost a typical case of Little's disease. Dr. George Riddoch, consulting neurologist, said that he examined Leslie Shewry in April, 1924. The child unquestionably had a lesion of the brain in both hemispheres. He did not believe that the condition was due to the effect of the injections. Dr. J. J. Abraham of Harley Street, a specialist in venereal disease, said that in 1920 an injection of "N.A.B." into the longitudinal sinus was considered the best method of treating congenital syphilis in the infant. He had himself treated 100 to 150 children by this method without any ill result. Even if Dr. Maybury's diagnosis was faulty, the treatment would do the child no harm. He agreed, in cross-examination, that if a doctor really diagnosed congenital syphilis he should inform the nurse or midwife that the case might be contagious. Mr. A. Lawrence Abel, F.R.C.S., of Harley Street, said that both in 1920 and at the present day the best way of treating congenital syphilis was by the injection of "N.A.B." into the longitudinal sinus; he had never heard of a case in which untoward results had followed. He considered that Leslie Shewry, whom he had examined a few months previously, had severe, but typical, Little's disease. Dr. A. Mearns Fraser, M.O.H., Portsmouth, said that the authorities had supplied "N.A.B." since 1917 to doctors who were regarded as capable of administering it properly, and Dr. Maybury, who had the necessary qualifications, was one of the first to whom the preparation was supplied.

The Summing-up.

After counsel had addressed the jury,

The Lord Chief Justice, in his summing-up, which lasted two hours, said that this was a case of exceptional gravity. He had had to do with no graver case during the twenty-seven years he had been engaged in the practice of the law, either at the bar or on the bench. The case was grave enough, in all conscience, when it started, but it had assumed an aspect of gravity which no one could have anticipated on reading the pleadings. Since the action came into court a great deal had happened. The writ was endorsed "for the defendant's negligence," and it was on the ground of negligence that the claim for damages was made. But in the course of the case the suggestion had been made on behalf of the plaintiff that this was not a case of negligence in treatment; a new and terrible suggestion had been made, that this defendant never diagnosed congenital syphilis at all, and entered upon a series of operations described as hazardous or dangerous deliberately in order to put fees into his pocket. If a doctor were guilty of that conduct it would not be a case of negligence, but of crime; not that he had exercised too little care, but that he had committed an assault, and also that he had attempted to obtain money by false pretences. If such a charge were seriously brought, the defendant would be in the dock, and the judge would tell the jury that they could not find him guilty unless they were satisfied beyond reasonable doubt. Imagine a prosecution attempting, after a lapse of nine years, on the basis of the controversial recollections of 1920, to secure the conviction of this practitioner. But had that course been taken, no mention of the case at Winchester would have been allowed to influence the verdict. It would have been far better, in this civil case, and after this lapse of time, had those responsible for the conduct of the plaintiff's case said, "Let us not disturb the calm atmosphere of this scientific inquiry by any topic of prejudice. Let us be fair with regard to the question of fees and other collateral matters which do not bear upon the scientific inquiry." Had that course been taken? No; the case began with talk about fees, it ended with talk about fees. He asked the jury to bring their minds dispassionately to bear upon what was really a scientific inquiry. Compassion for the child and its parents must not be allowed to divert the judgement. It must not be said, "This thing has happened; the injections were made; blame the doctor."

Again, under the system of law, which was the growth of many centuries, there were certain things called statutes of limitations. An action could not be brought for the recovery of a simple debt after six years, and in the case of things like assault the limitations were closer. Actions for assault and trespass, according to a statute of James I, must be commenced within four years of the cause of such action. If what was alleged in this case had happened to an adult, this action, relating to what had taken place nine years ago, could not have been brought, but the statute did not hold good in the case of an infant. Why did our wise forefathers pass statutes of limitations? No doubt in part it was to prevent or diminish fraud; but was it not, in addition, out of a sense of fairness, that it was not possible after many years fairly to bring to light all the relevant materials in a condition in which they might be suitably marshalled and impartially examined? He had been asking himself as the case proceeded, "What were *you* doing on a given date in 1920?" How impossible it was to recollect! And this case depended not only upon recollection, but upon controversial recollection—recollection developed, perhaps, during months and years of disappointment and resentment.

It was vital for the plaintiff to establish that the injuries complained of were the result of the negligence. It was idle to prove that the defendant was negligent if it was not proved that the negligence resulted in the injuries of which complaint was made. Otherwise it was like pulling a bell-handle with no bell at the other end. The case failed utterly unless it was shown that the bodily and mental condition of this child was the result of negligence or, as the case had developed, the calculated dishonesty of the defendant. There was no more room in this case for adjective or rhetoric than in an inquiry as to whether the formula for water was H_2O. The investigation was just as dry and scientific as that. Here was a boy in a certain condition of mind and body. Was it established that the cause of that condition was what was done by this defendant in July and August, 1920?

Lord Hewart then turned to the evidence. On the side of the plaintiff there was the evidence of Dr. Crawford, who, however, knew of no case in which an injection into the brain had caused epilepsy. Then came Mr. Burrows, who had been closely associated with this case, but who said frankly that he did not treat syphilis himself, and that, "except in textbooks," he had never heard of such a condition as was found in this case as being due to injection. When asked what the textbooks were, he said that Professor Leonard Findlay, in his book *Syphilis in Childhood* (1919), had referred to the danger; but it proved that Professor Findlay was speaking of the injection of salvarsan —"606"—which was a far more irritant thing, according to all the evidence. Mr. Burrows laid stress upon the coincidence of time—which, however, depended upon what was told him about the history—and upon the coincidence of place—that is, that the part of the brain which the injections presumably entered was the part affected in this case as judged by the paralysis. Finally, came Dr. Cosens, who had never seen the child until a few weeks ago, when the contest had already been marked out and the allegations put forward. He also said, however, that "N.A.B." was the best form of arsenic to use for intravenous injection; salvarsan was a more irritating form. But he believed that if "N.A.B." reached the brain cells it would destroy them.

What of the expert evidence on the other side? Gentlemen of high position in the profession had come into court to tell their experience. Dr. MacPherson had said that not only were the injections not the cause of the condition, but he could tell the court what the cause was: it was not the case that brain substance which had been there was destroyed by the mechanical introduction of a foreign body but it was because, in the

[1] *British Medical Journal*, ii, 1925, p. 42.

inscrutable course of nature, this child had not been born with a complete brain; there had been failure of a part of the brain to come to birth. Dr. MacPherson said that the use of "N.A.B." injections in the longitudinal sinus was considered proper in 1920, and was considered proper still. Then came Dr. Walshe, who found that it was a characteristic and severe case of Little's disease, in which the symptoms were a generalized rigidity of the child's muscles, having the effect of partly paralysing its movements, and there were also indications of idiocy. Dr. Walshe knew of no case where such a condition as was found here was traceable to injections. This child's brain was very profoundly affected throughout its substance. If this amount of damage had been inflicted by outside interference the child must have died almost at once. Then came Dr. Riddoch, not originally anticipated as a witness, but called because of an incidental reference to a document made in the course of the case. He spoke to having seen the child in 1924, and said, "I never thought, nor do I think, that the condition was or could be produced by the injection of 'N.A.B.'" Then Dr. Abraham, surgeon to the London Lock Hospital, who said that in 1920 the method of "N.A.B." injection into the longitudinal sinus was considered the best and a safe method in treating little children. Finally, there was Mr. Abel, who said that the dose given to this child was only one-ninetieth of the dose given to an adult, and that if the fluid went through the sinus to the brain in this strength and quantity it would have no effect in ninety-nine cases out of a hundred, and he could not believe that in any case permanent injury to the brain could be caused. Such a portion of the brain could not have been damaged by external influence except by such injury as would kill.

Here was a body of testimony, said the Lord Chief Justice, from the heads of the profession that the injury could not have been due to the treatment. Were the jury going to say that they did not care whether it was impossible or not, that it might be quite true there had never been another case, but nevertheless they were going to find that it happened in this one? Unless the jury were satisfied that the condition of the infant was indeed due to the action of this doctor in 1920 there was nothing else in the case. Therefore he asked the jury to say, "Was the condition of this infant caused by the treatment administered by the defendant?" If the jury answered "No," he need not trouble them with anything else. If, however, it was found, somehow, that this deplorable condition of the child was due to these injections, one came back to the question of negligence. Here he quoted Mr. Justice Tindal in 1838—what he said then was still the law—and, earlier still, Lord Ellenborough. Every person who entered into a learned profession undertook to bring to the exercise of it a reasonable degree of care and skill. He did not undertake, if he was an attorney, that he would gain his case, nor, if he was a surgeon, that he would perform a cure, but he undertook to bring to the case a fair, reasonable, and competent degree of skill. A surgeon, to quote Tindal, did not become an actual insurer. He was bound only to display sufficient skill and knowledge of his profession.

The Lord Chief Justice then examined other points in the evidence in which there was conflicting testimony. In the statement of claim it was affirmed by the plaintiff that the child was suffering from thrush before the injections were begun; but in the witness-box, by the witnesses for the plaintiff, the question of thrush had been avoided, or negatived, or dated to the following month. Was it not apparent that for some reason or other, either deliberately or through the unconscious play of the mind, it had been thought desirable to exclude the mention of thrush, in a baby said to have been without spot or blemish, because with thrush there would be a rash? His lordship also referred to the fact that it was not until eighteen months after the birth that the father consulted Dr. Campbell about the child, and, after Dr. Campbell's death, Dr. Crawford. Was it to be believed that during that interval this child was having fits every day? How easy, looking back on the many occasions when this child was in the paroxysms of epilepsy, to antedate the beginning of the trouble!

The Jury's Decision.

The jury disagreed on the question whether the condition of the child was caused by Dr. Maybury's treatment. On the other questions which the Lord Chief Justice put to them they answered as follows:

> Did Dr. Maybury believe that the infant plaintiff had congenital syphilis?—Yes.
>
> Was Dr. Maybury negligent in diagnosing that the infant plaintiff was suffering from congenital syphilis?—Yes.
>
> Was he negligent in deciding on the method of treatment?—No.
>
> Was he negligent in the way in which he administered the treatment?—Yes, in his general treatment.

The Lord Chief Justice said that having regard to these answers the case was not closed; it would be put into the paper for further discussion by counsel at a date to suit both parties.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Assembly of New Parliament.

THE new Parliament assembled on June 25th, when the House of Commons re-elected Captain Fitzroy as its Speaker. The Lords took the Oath, and the Commons also spent the rest of the week in swearing in. The King's Speech is to be read by Royal Commission on July 2nd, and is expected to announce a long legislative programme, including proposals on health and housing. The medical M.P.'s and Peers will meet at an early date to set up a Parliamentary Medical Committee, and are expected to select a medical member of the Labour party as its chairman, to facilitate contact with the Government on medical subjects.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Rockefeller Fellowships for Medical Research.

THE Hon. Olive B. Buckley, B.M., Somerville College and King's College Hospital, and Miss Janet M. Vaughan, B.M., Somerville College and University College Hospital, have been appointed by the Medical Research Council to Rockefeller Travelling Fellowships for the year 1929-30.

UNIVERSITY OF CAMBRIDGE.

PROFESSOR H. R. DEAN, M.D., has been admitted as Master of Trinity Hall, in succession to Dr. Henry Bond.

The Council of the Senate has appointed Sir Humphry Rolleston, Regius Professor of Physic, to be a Governor of the Darwin Trust, which administers property at Girton for the encouragement of research into mental defect or disorder.

The Vice-Chancellor gives notice that a congregation, at which degrees in medicine and surgery will be conferred, will be held on Saturday, July 20th, at 2 p.m.

The following candidates have been approved at the examinations indicated:

M.CHIR.—J. Gray, R. H. Metcalfe.

THIRD M.B., B.CHIR.—(*Part I, Surgery, Midwifery, and Gynaecology*): C. Arthur, A. R. Banham, D. W. Bawtree, G. H. Bradshaw, J. W. Bromley, G. Herbert, H. L. Hoffmann, F. W. Holdsworth, H. P. Hutchinson, R. W. McConnel, W. M. Macgregor, G. C. C. MacVicker, R. B. Mayfield, I. B. Morris, G. W. Pickering, P. H. L. Playfair, R. B. Pringle, B. Rothery, J. D. Simpson, F. J. G. Slater, J. H. Smith, E. C. Sugden, W. E. Tucker, J. K. Willson-Pepper, W. R. Winterton, H. M. Yardley. *Women:* G. E. Grove, M. C. Seward. (*Part II, Principles and Practice of Physic, Pathology, and Pharmacology*): C. P. Campion, A. J. W. Chamings, C. J. Grosch, C. Hill, T. A. A. Hunter, P. G. S. Kennedy, L. W. A. Lankester, J. F. V. Lart, G. E. Lewis, T. K. S. Lyle, F. H. McCay, R. A. Maynard, A. D. Morton, W. G. Oakley, J. R. Peacock, G. W. Bickering, L. J. Rae, T. S. Read, J. E. Semple, D. M. Stern, C. G. Townsend, W. E. Tucker, J. F. Varley, J. Vaughan-Bradley, F. W. J. Wood. *Women:* F. Ram, M. C. Seward, B. M. Willmott, K. Wilson.

UNIVERSITY OF LONDON.

THE degree of D.Sc. in Anthropology has been conferred on William James Perry, University reader in cultural anthropology.

UNIVERSITY OF GLASGOW.

AT the graduation ceremony on June 19th (as recorded at p. 1175, the honorary degree of LL.D. was conferred upon Dr. C. O. Hawthorne, Chairman of the Representative Body of the British Medical Association.

The Harry Stewart Hutchison Prize of £55 for a writing or writings embodying original research in a branch of medical science relating to children was presented to Dr. Peter L. McKinlay for his essays on mortality of infants.

UNIVERSITY OF BELFAST.

PROFESSOR A. M. DRENNAN, M.D., F.R.C.P.Ed., has been appointed part-time lecturer in medical jurisprudence. Dr. C. S. Thomson, the new medical officer of health for Belfast, has been appointed part-time lecturer in public health administration.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—A. Campbell, R. Gilmore, S. R. G. Pimm.

MEDICINE.—P. S. Balachandran, G. A. F. Holloway, P. Horton, B. J. Niall.

FORENSIC MEDICINE.—A. Clark, H. G. Edmunds, B. J. Niall, Z. Risk.

MIDWIFERY.—L. P. Clarke, W. T. Ellis, J. Gordon, W. M. Hamer, J. H. Johnston, E. J. O'Loughlin, P. U. Rao.

The diploma of the Society has been granted to Mr. B. J. Niall.

Medical News.

THEIR Royal Highnesses the Duke and Duchess of York will open the Devonport Pathological Laboratory and the Devonport Nurses' Home, at the Dreadnought Hospital, Greenwich, on Monday, July 15th, at 3 o'clock.

THE annual dinner of the West London Medico-Chirurgical Society will be held at the Trocadero Restaurant on Thursday, July 4th, at 7.30 for 8 p.m.

FOUNDER'S DAY at Epsom College will be celebrated this year on Saturday, July 27th, when the prizes will be given away by Lord Eustace Percy, late President of the Board of Education, at 2.45 p.m. At noon there will be a service in chapel for boys and parents, and in the evening a performance by the School Dramatic Society.

A SPECIAL course in the radium treatment of cancer will be held at the Westminster Hospital Medical School from July 29th to August 3rd. The course is designed for medical men who have recently had, or are about to have, radium placed at their disposal. The fee is 10 guineas. Full information can be obtained from the Dean, 12, Caxton Street, S.W.1.

THE Fellowship of Medicine and Post-Graduate Medical Association has arranged two free clinical demonstrations: one on July 1st, at 4.30 p.m., at the West End Hospital for Nervous Diseases, by Dr. L. R. Yealland; the other on July 4th, at 3 p.m., at St. Paul's Hospital, by Mr. Winsbury White. From July 1st to 6th the following lecture-demonstrations will be given in connexion with "Baby Week"; this series is open to all members of the medical profession, and the fee is 10s. 6d.; July 1st, clinics at Queen Charlotte's Hospital, morning and afternoon, by Mr. Trevor Davies, Mr. Aleck Bourne, Mr. L. C. Rivett, and Mr. Leonard Phillips, followed by an evening lecture at the B.M.A. House by Dr. J. S. Fairbairn; July 5th, morning demonstration at the Tavistock Clinic by Dr. Hamilton Pearson and Dr. Alice Hutchison, and afternoon demonstration at the Infants Hospital by Dr. Eric Pritchard; July 6th, morning demonstrations at the London Lock Hospital by the obstetric surgeon and at St. Thomas's Hospital by Dr. R. C. Jewesbury. From July 8th to 20th there will be an afternoon course at the Hospital for Diseases of the Skin, Blackfriars Road; fee, £1 1s. In August three courses will be given: in urology at the All Saints Hospital for one month; in diseases of children at the Queen's Hospital for two weeks; and in medicine, surgery, and the specialties at the Queen Mary's Hospital, Stratford, for two weeks. Detailed syllabuses of courses and information on post-graduate work may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1.

THE following courses of lectures and demonstrations open to post-graduate students will be conducted in English at the Faculty of Medicine in Paris during October next: surgery of the eye, October 2nd to 12th: paediatrics, with special reference to respiratory diseases and tuberculosis in infancy and childhood, October 7th to 12th; diseases of the lung, October 21st to 26th; surgery of the digestive tract and liver, October 14th to 19th; cardiology, October 21st to 31st; and surgery of the ear, nose and throat, October 14th to 25th. Further information and particulars of fees, etc., may be obtained from the Association pour le Développement des Relations Médicales, Salle Béclard, Faculté de Médecine, Paris (6e).

A POST-GRADUATE course on recent advances in medicine, with special reference to therapeutics, will be held at the Faculty of Medicine, Vienna, from September 30th to October 13th, and followed by discussion classes from October 14th to 19th. Further particulars may be obtained from the Dean, Wiener medizinische Fakultät, Wien.

THE fortieth congress of the Royal Sanitary Institute will be held at Sheffield from July 13th to 20th, under the presidency of Earl Fitzwilliam. The details of the congress programme were published in our issue of May 25th (p. 971); it is now announced that the business will be divided into six sections—namely, preventive medicine, architecture and engineering, maternity and child welfare (including school hygiene), hygiene of food, hygiene in industry, and veterinary hygiene; and the following six conferences: representatives of sanitary authorities, national health insurance services, medical officers of health, engineers and surveyors, sanitary inspectors, and health visitors.

THE eleventh annual conference of the Association for Education in Industry and Commerce will be held in London on July 1st, 2nd, and 3rd, at the Savoy Hotel, Strand, and the Polytechnic, Regent Street.

THE sixth Congress of French-speaking Obstetricians and Gynaecologists will be held at Brussels from October 3rd to 5th, on the occasion of the fortieth anniversary of the foundation of the Belgian Society of Obstetrics and Gynaecology. The following subjects will be discussed: relations between the hypophysis and the genital system in women, introduced by Drs. L. Brouha of Liège and J. L. Wodon of Brussels; myomectomy during and apart from pregnancy, introduced by Drs. Mériel and Baillet of Toulouse and Brindeau of Paris; indications for, and technique of, sterilization in women, introduced by Drs. Muret of Lausanne and Laffont of Algiers. Further information can be obtained from the general secretary, Dr. Max Cheval, 16, Rue Alphonse-Holtat, Brussels.

THE eleventh Carlsbad international medical post-graduate course with special reference to balneology and balneotherapy will be held from September 15th to 21st. Clinicians and scientists from the medical faculties of nearly all European countries will give addresses. An invitation is extended to all physicians; those who accept will receive a passport visé without charge and a 33 per cent. reduction on all State railways in Czechoslovakia. A programme of entertainment has been arranged. Further information may be obtained from the secretary of the medical post-graduate course, Dr. Edgar Ganz, in Carlsbad, Czechoslovakia.

THE following German congresses will be held next September: Society of Tropical Medicine at Tübingen, 12th to 14th; Orthopaedic Congress at Münich, 16th to 18th; Industrial Hygiene at Heidelberg, 16th to 18th; Pharmaceutical Society at Münster, 25th.

THE friends, colleagues, and pupils of the late Professor J. A. Sicard have decided to have a medallion of him placed in the Hôpital Necker, where he held his consultations. [illegible] raise a fund for investigations on the physiology, p[illegible] and treatment of the nervous system. Subscri[illegible]ould be sent to MM. Masson et Cie, 120, Boulevard [illegible]ermain, Paris, VIe.

THE honorary degree of Doctor of Laws has been conferred by Princeton University, New Jersey, upon Sir Wilfred Grenfell, K.C.M.G., M.D.

PRESIDING over the proceedings of commemoration day at Livingstone College, Leyton, the Bishop of Chelmsford emphasized the importance of educating missionaries medically so that they might deal with the various emergencies in isolated parts of the mission field. Reports of the value of this training were given by missionaries from Sierra Leone and Paraguay. Mr. W. McAdam Eccles commented on the economical way in which the college was conducted, and pleaded for additional support. The principal of the college stated that twenty-four students had entered it during the present year, of whom eight had taken the full course. The number attending a course held last July was thirty-two, and twenty-four others had come for more elementary instruction as regards the care of the health.

Commonhealth, a periodical for the instruction of children in the prevention of tuberculosis, has been issued by the Tuberculosis Committee of the Belfast Corporation, under the editorship of Dr. Andrew Trimble, chief tuberculosis officer. Most of the articles in the April number contain information of interest to teachers, parents, and children alike. Copies may be obtained from Dr. Trimble at 1d. each, or 9d. per dozen, post free.

PART XIII of the Minutes of Evidence taken before the Royal Commission on Local Government has been issued (obtainable from H.M. Stationery Office or through any bookseller, price 6s. 6d. net). It contains the evidence given on behalf of the County Councils Association, the Association of Municipal Corporations, the Association of Local Government Officers, and by other witnesses between December, 1928, and March, 1929.

AT the last meeting of the Metropolitan Asylums Board it was reported that in the "Freedom from Accidents" competition for 1928 the National "Safety First" Association had awarded medals, or bars for medals previously awarded, to thirty-eight of the Board's motor ambulance drivers who had been free from accidents for from five to seven consecutive years. The medals were presented to the drivers by the chairman of the Board, Lord Donegall. In addition, diplomas have been awarded to eighty-five other drivers who have been free from accidents for shorter periods. When regard is had to present-day conditions of traffic in the inner London areas in which most of the Board's ambulance work is carried out, and to the need for avoiding delay when en route, these figures may be regarded as very commendable.

CONSIDERABLE developments are foreshadowed at Woodhall Spa, where the baths were kept open through the winter for the first time last year. A proposal to enlarge the bath-house and to build a new hostel for patients to replace that burnt down a few years ago has been adopted by the controlling syndicate. The Alexandra Hospital (16 beds for men and

16 for women requiring spa treatment) is being enlarged and provided with a new heating plant, a room for Plombières douching, and another for electrical treatment.

DR. LUDVIG HEKTOEN, head of the department of pathology at the University of Chicago and director of the John McCormick Institute for Infectious Diseases, was recently decorated with the Norwegian Order of St. Olaf for distinguished service in medical science.

PROFESSOR KARL HERXHEIMER of Frankfort has been elected honorary member of the Dutch Dermatological Association, the Roumanian Dermatological Society, and the Dermatosyphilological Society of Saratow; and Professor Wilhelm Kolle has been nominated honorary member of the Società Italiana di Dermatologia e Sifilografia.

THE Hanover Medical Club, founded by the orthopaedic surgeon Georg Friedrich Louis Stromeyer, celebrated the centenary of its foundation last month.

THE following appointments have recently been made in foreign faculties of medicine: Professor Felix Klewitz of Königsberg, successor of the late Professor Eduard Müller in the chair of internal medicine at Marburg; Dr. Knoll of Arosa, professor of physical exercises at Hamburg; and Dr. R. Wagner, professor of physiology at Graz.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
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FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

GLAND IMPLANTATION FOR RHEUMATOID ARTHRITIS.

DR. WILLIAM ALLEN (Glasgow) writes: A Dr. Paul Niehans of Montreux claims to have cured some cases of rheumatoid arthritis in women by the implantation of sheep's ovaries in the abdominal wall. I should be glad to know if any medical man in this country has had a patient treated by this method, or has actually seen a case of rheumatoid arthritis before and after this treatment, and what was the result?

STIES.

DR. J. E. HARFORD (Haxey, Lincs) writes: Could any reader give some suggestion for treatment of recurrent sties? The patient has had most of the ordinary treatments, including *x* rays to lids and examination for errors of refraction, of which there is none existing.

HAY FEVER.

DR. J. D. HINDLEY-SMITH (London, W.) writes: I should be grateful if anybody would inform me whether any clue is obtainable in a case of violent hay fever with the following history. The condition has in previous years begun about May 27th. This year has, botanically speaking, been a late year, and the hay fever did not begin until June 9th. Possibly this may suggest some particular variety of vegetable life to a reader having a better knowledge of botany than I possess.

SCREAMING FITS IN AN ADULT.

"SENEX" writes: I have a patient, aged 64, deaf, a professional man, with a large prostate, who has the usual disturbances every three hours at night. He had slight hemiplegia in 1927, was unconscious for two days, but completely recovered. He has suffered from muscular rheumatism since childhood, and now has rheumatic osteitis in the knees, but is able to get about for six-mile walks. He has lately developed frequent "startlings" during the day on slight noises, such as coal crackling in the grate. These starts are often accompanied by a loud scream. Valerian and bromide has no effect. These night and day disturbances are producing steady deterioration and depression. Suggestions for treatment and prognosis will be welcomed from any readers who have had similar cases under their care.

DIATHERMY OF THE TONSILS.

DR. WARNER COLLINS (London, S.W.), in reply to Dr. M. Y. Paget's inquiry (June 22nd, p. 1146) writes: I have treated over a hundred cases by diathermy within the last three years with no accident of any kind. Cocaine anaesthesia is used: there is no hospitalization of the patient, no shock, and no haemorrhage.

PAINFUL HEEL.

"X. X." writes: In several recent issues you have published suggestions, in answer to a query by "Giza" (May 11th, p. 890), on a case of painful heel. There have been various explanations of the cause of the condition, but I have not yet seen a reply by "Giza" giving the final diagnosis. I feel sure that those who reply to queries, and no doubt others of your readers, would be interested to have the ultimate diagnosis, when this is available.

WATER SOFTENERS.

DR. W. A. D. LAWSON (Luton), in reply to "Member of Forty Years' Standing" (June 15th, p. 1104), writes: Having recently come to live in an area near London with a water of some 20 degrees of hardness (mostly temporary), I have installed a domestic softener costing £5 or £6. The apparatus is a cylinder some 6 inches in diameter and about 2 feet long, which connects like an ordinary hose-pipe to the kitchen tap. It is made by the Electrolux firm at Luton, Beds, and can effectually soften 15 to 20 gallons of water of above hardness. Larger forms are made which are fixed permanently to the pipes. After exhaustion renewal is brought about by passing through it a strong solution of salt. The same idea is used in the Permutit type of softener, and the chemistry is the exchange of calcium for sodium in the case of the carbonates, and on regeneration the sodium is retained and calcium chloride comes away. Hence there is nothing deleterious added to the water, and it is quite palatable, though some prefer the taste of hard water, and some think the latter makes better tea. Apart from the obvious advantages of soft water for washing, it is perhaps not so well known that soft water is better for most cooking purposes, especially of greens. One warning is, perhaps, worth while—namely, the softened water charged with soda should not be used in aluminium pans.

UMBILICAL DISCHARGE.

"CONSULTANT" writes in reply to "W. D." (June 15th, p. 1104), who asked if anyone could suggest the cause of an occasional discharge from the umbilicus in a woman of 32: I would suggest as the most probable cause a patent urachus, and that the fluid is rather of the nature of urine mixed with some serum. I have seen two cases in which the condition occurred as a complication of pregnancy. In one it never evidenced itself after the confinement, and in the other, in consequence of the discharge becoming somewhat worse after confinement, I cut down on the urachus and removed it. Both these cases were uncomplicated by any infection. In another case with definite abscess formation, shortly after confinement, I operated and removed a well-defined pus sac. The non-septic case showed quite clearly the communication between the bladder below and the umbilicus above. In the septic case, however, though I could trace a continuity between the lower portion of the abscess cavity and the bladder, I could not discover the connexion with the umbilicus. Ordinarily the urachus is cut off from the bladder by a valve-like arrangement, and, so long as this valve acts satisfactorily, there is no escape of urine into the urachus, which gradually shrivels and is converted into the cord-like structure, which one can easily recognize when opening the peritoneal cavity in the mid-line. Occasionally the action of the valve is incomplete and the urachus retains its patency, so that any distension of the bladder may cause an overflow upwards and an escape through the umbilicus. It is, therefore, quite possible that there may be merely an occasional escape of fluid from the umbilicus; or, with some obstruction existing at the umbilical end, there may occur, if infection does not gain entrance, a cystic enlargement, or, if it does, an abscess. "W. D." will find that there is a fairly large amount of literature on the subject.

INCOME TAX.

Sale of Practice on Introduction Basis.

"R. J. F." has sold his practice as from August 19th, 1929, with a six weeks' introduction to September 30th, at the rate of £1,000 per annum, after which he hopes to go to another practice. How should his return for 1929–30 be made?

*** He will be liable for the period April 5th to September 30th at the amount of his earnings for that period, and the Inland Revenue authorities are entitled to revise his assessment for the year ended April 5th, 1929, to the amount of his earnings for that year. After August 19th he will not be chargeable to tax on cash receipts for work done prior to that date, his general practice earnings having then ceased, except as regards the special fee of six weeks' salary at £1,000 per annum, which is more in the nature of remuneration for employment than of a general practitioner. On the other hand, in dealing with the liability on any new practice he may purchase he will not be allowed to

adopt the cash basis, and will be chargeable on the basis of the value of his bookings. As regards the rendering of his return the most convenient course seems to be to explain the facts to the local inspector of taxes and arrange with him for the statement to be lodged after August 19th.

Cash Basis: Practice Sold.

"D. W. R." has relinquished his practice, and his accountant informs him that "he is liable for all fees received after relinquishing the practice, or, alternatively, that the assessor can go back and assess him on a credit basis."

*** The first alternative is not legally correct. As from the date "D. W. R." gave up the practice he ceased to derive *income* from it; any sum he may have received represented payment of capital amount of debts due to him as at the date of relinquishment. The second alternative, however, holds good, but it is very rarely applied, because over a period of, say, six years the annual value of the bookings is normally about equal to the cash receipts—in fact, if the bookings have been falling off the adjustment should work out to "D. W. R.'s" advantage. There is no special precedent or judicial decision on the point; in our experience it is admitted by the authorities.

New Partner: Succession or New Practice.

"PAR" has been taken into partnership by a practitioner who, up to then, had been in practice by himself. The inspector of taxes claims that the cash basis must be discarded and the practice assessed as a new one as from the date when our correspondent became a partner.

*** This involves the new legislation introduced by the Finance Act of 1926. As we read the relevant section the practice must be treated as a continuing one, unless both partners agree otherwise. If so treated there is no reason why the cash basis should be discarded, provided that *all* cash receipts are brought into the computation of the gross assessment, whether our correspondent is entitled to share in them or not.

Residence Abroad.

"R. B." inquires whether, if he lives out of Great Britain for more than six months in the year, he is entitled to claim relief in respect of income tax on his retired (naval) pay.

*** As a British subject living abroad he is entitled to a proportion of the personal allowance, according to the ratio of the amount of income assessable to British income tax to the amount of his total income, including therein, of course, income which may be exempt from assessment owing to his residence abroad.

Assistant: Board and Lodging.

"R. L." received as an assistant £300 a year *plus* free rooms and attendance. The inspector of taxes regards the latter benefit as worth £75 a year, and claims to assess "R. L." at £375.

*** One of the leading cases decided in the House of Lords many years ago that a bank manager was not liable to account for tax on the value of free accommodation, which he had no power to sublet, on the ground that that advantage of his employment was not capable of being converted by him into cash, though it saved him laying out some cash for his personal benefit. "R. L.'s" case seems clearly to fall within that rule, and it is not understood on what ground it is sought to assess him on the £75. We suggest that he should inform the inspector of taxes that he is advised that his case seems to be covered by the decision in the case of Tennant *v.* Smith, and should request the inspector to explain the grounds on which he seeks to differentiate that case from his own.

Earned Income Relief.

"H. W. H. H." has been allowed the one-sixth relief in respect of earned income as calculated on the gross earnings—£1,000, less expenses, £300. Is this basis correct?

*** Yes. The effect of the relief is to reduce the assessable earnings by one-sixth; £1,000–£300=£700 is the amount assessable, and one-sixth of £700 is the maximum amount of relief. The common sense of the rule will be apparent from the ordinary case of a tradesman whose gross profits may be three or four times his net profits, after deducting rent and rates, wages, and other expenses.

Employment: Broken Periods.

"A. R. B.'s" earnings during the income tax year 1927–28 were £167, partly as assistant and partly as locumtenent, but for six months of the year he was "virtually unemployed," owing to post-graduate work. For 1928–29 he earned £240 in a similar capacity. What is his liability for that year?

*** It appears from the facts that "A. R. B." ceased his employment in 1926–27, and started it again after completion of his post-graduate course. Section 45 (4) of the Finance Act provides that for the first year of the holding of a particular office or employment the amount to be assessed under Schedule E is the total earnings of that year. If our view is correct—that is, that the employment was temporarily discontinued—then 1928–29 is the first year of resumption, and "A. R. B." is assessable on the amount of the earnings of that year. We may, perhaps, add that a similar result would be reached if the professional work is regarded as producing profits assessable under Schedule D.

Motor Car Expenses.

"E. F. B." holds a public appointment and uses a car "partly for work and partly for pleasure," the total average mileage being about 7,000 a year. How should the claim to allowance for motor expenses be calculated?

*** The first essential is to ascertain approximately the ratio between professional and private use. Suppose it is half and half, then "E. F. B." will be entitled to one-half the depreciation allowance—which, on the basis of an original cost of £180, we calculate at one-half of £23 for the third year of the life of the car—*plus* one half of the fixed charges—tax, insurance, and garage cost—and running expenses, petrol, oil, repairs, etc. When the car is replaced one-half of the obsolescence allowance should also be claimed as an expense.

Purchase of Motor Car.

"A. G." bought a new (first motor car in February, 1928. What "expenses" can he claim, as against the year 1928?

*** No portion of the cash outlay on the purchase of a first car can be allowed, as it represents the investment of capital in the equipment of the practice; it may, of course, be different with a second car bought to maintain the equipment rather than to create or improve it. But "A. G." can claim as an "allowance," not strictly as an "expense," 15 per cent. or 20 per cent. of the cost, as representing depreciation, by reason of wear and tear.

LETTERS, NOTES, ETC.

LOOSE DIAGNOSIS OF DIABETES.

DR. F. G. BUSHNELL (Plymouth) writes: The tendency in certain quarters to diagnose diabetes on insufficient data is to be deprecated. If a patient's urine contains a small or large trace of sugar, without definite changes in his blood sugar, it is nowadays the fashion among certain physicians, though other characteristic diabetic symptoms may be absent, to diagnose diabetes and prescribe a restricted diet. Such traces of sugar in the urine may be temporary and be due to transitory ill health; thus a physician abroad diagnosed diabetes from the presence of sugar in the urine, though his diagnosis was promptly and rightly corrected by two London physicians. Something should be done to check this tendency to make a loose diagnosis of diabetes. The rigid dieting such diagnosis involves imposes a real and great hardship on working-class patients, and as a member of the British Medical Association for thirty-five years I ask the Association to take action.

MEDICAL GOLF.

THE Medical Golfing Society held their summer meeting at Walton Heath on Thursday, June 20th, by the kind permission of the Walton Heath Golf Club, and at the invitation of Lord Riddell, who again entertained all the competitors as his guests. A delightful day was spent, and the golf was distinctly good. Play was from all back tees. The results of the competitions were as follows:

Lancet Challenge Cup.—H. Gardiner Hill, 2 up. T. P. Kolesar all square.

Henry Morris Challenge Cup.—F. Rose, 2 up. R. Lindsay Rea, L. W. Bathurst, Sir Milsom Rees, A. Gallately, all 1 up.

Milsom Rees Challenge Cup.—F. Rose.

Veteran's Cup (presented by Sir Kenneth Goadby).—F. Rose.

Sealed Handicap (Mr. George Dawson's prize).—A. Soper, 1 up.

*Class I.—**First Prize:*** A. C. Palmer, 3 up. ***Second Prize:*** Sir Milsom Rees and A. Gallately, 1 up. T. P. Kolesar and D. Jackson, all square. ***Best last nine holes:*** T. Scordy.

*Class II.—**First Prize:*** F. Rose, 2 up. R. Lindsay Rea and L. W. Bathurst, 1 up. J. Ligat, all square. ***Best last nine holes:*** W. Yorke-Davies, 1 up, after tie with L. W. Bathurst.

Foursomes.—C. Max Page and Sir Stanley Hewitt, 3 up. E. Laming Evans and M. L. Trechman, 1 up.

HYGIENE FOR THE YOUNG.

WE have received from the Health and Cleanliness Council (5, Tavistock Square, W.C.1) a copy of its new publication, entitled *On the Arch of the Rainbow*, in which the author, Mary Tyreman, uses the pleasant form of the fairy tale to coat the pill of hygienic instruction. The booklet has been specially written for young people, and the Council is prepared to put supplies without charge at the disposal of teachers, Girl Guide captains, and all those interested in the teaching of hygiene to children.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 41, 42, 43, 44, 45, 46, 47, 50, 51, and 52 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 982.

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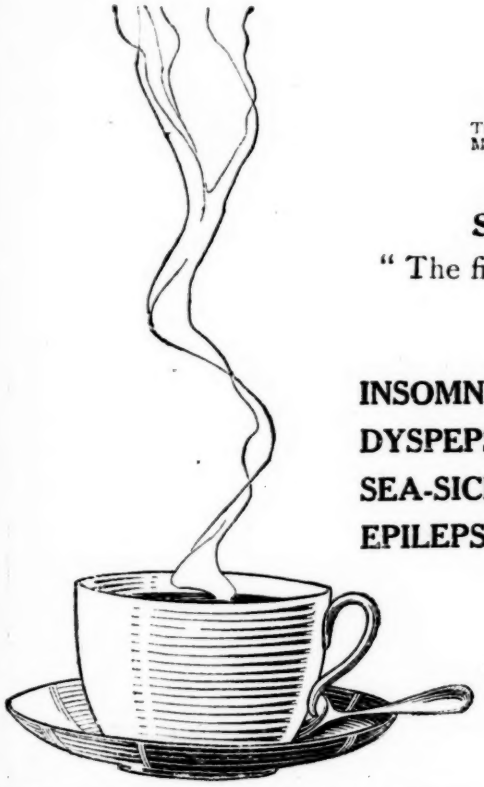

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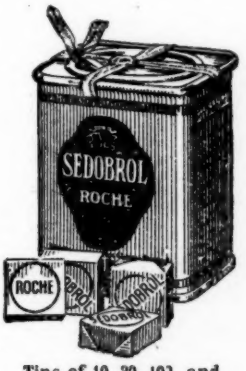

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